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Jerry Hansen
AFCEE/EST

# Work Plan for an Engineering Evaluation/Cost Analysis In Support of the Intrinsic Remediation (Natural Attenuation) Option

**Plattsburgh Air Force Base**
**Plattsburgh, New York**

**Prepared For**

**Air Force Center for Environmental Excellence**
**Brooks Air Force Base**
**San Antonio, Texas**

**and**

**Plattsburgh Air Force Base**
**Plattsburgh, New York**

**November 1993**

AQ M01-03-0492

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# SECTION 1

# INTRODUCTION

This work plan was prepared by Engineering-Science, Inc. (ES) and presents the scope of work required for the collection of data necessary to conduct an engineering evaluation/cost analysis (EE/CA) for remediation of groundwater contaminated with fuel hydrocarbons and chlorinated solvents at the former Fire Training Area (FT-002) at Plattsburgh Air Force Base (AFB), Plattsburgh, New York. Several remedial options will be evaluated during the EE/CA, including removal of remaining free-phase petroleum hydrocarbons not extracted during an earlier removal action (E.C. Jordan Co., 1990); groundwater extraction, treatment, and reinjection (i.e., pump and treat); air sparging; installation of a reactive wall; and *in situ* contaminant attenuation through natural processes (intrinsic remediation option) coupled with long-term monitoring. All hydrogeological and groundwater chemical data necessary to evaluate the various remedial options will be collected under this program; however, this work plan is oriented toward the collection of hydrogeological data to be used as input into the Bioplume II® groundwater model in support of the natural attenuation remedial option (intrinsic remediation) coupled with long-term monitoring for restoration of groundwater contaminated with fuel-related compounds, chlorinated solvents, and limited free-phase petroleum hydrocarbons.

As part of the EE/CA, the Bioplume II® modeling effort has four primary objectives:

- Determine the fate and transport of fuel-related hydrocarbon compounds and chlorinated solvents dissolved in groundwater at the site;
- Assess the potential for, and rate of, degradation of both fuel hydrocarbons and chlorinated solvents by indigenous microorganisms;
- Assess the possible risk to potential downgradient receptors; and
- Provide technical support for the evaluation and potential selection of the natural attenuation remedial option.

This work plan was developed based on several discussions among representatives from the Air Force Center for Environmental Excellence (AFCEE), Plattsburgh AFB, Applied Research Associates (ARA), the U.S. Environmental Protection Agency (USEPA), and ES, and on a review of existing site characterization data. The EE/CA evaluation and the Bioplume II® modeling effort each involve completion of several tasks, which are described in the following sections.

All necessary field work will follow the health and safety procedures presented in the program Health and Safety Plan for Bioplume II® Modeling Initiative (ES, 1993) and the site-specific addendum to the program Health and Safety Plan, which has been submitted to USEPA. This work plan was prepared to coordinate the activities of all agencies involved in the EE/CA, including ES, AFCEE, Plattsburgh AFB, ARA, and USEPA.

## 1.1 SCOPE OF CURRENT WORK PLAN

The ultimate objective of the work described herein is to provide an EE/CA for remediation of groundwater contamination at the former Fire Training Area (FT-002) at Plattsburgh AFB, New York. However, this project is part of a larger, broad-based initiative being conducted by AFCEE in conjunction with USEPA and ES to document natural contaminant biodegradation by indigenous microorganisms and resulting attenuation of fuel hydrocarbons and possibly chlorinated solvents dissolved in groundwater, and to model such degradation using the Bioplume II® numerical groundwater model. For this reason, the work described in this work plan is directed toward the collection of data in support of this initiative, as well as data required to provide a 30-percent design of a groundwater remediation system, should intrinsic remediation not prove to be a viable remedial option at this facility. This work plan describes the specific site characterization activities which will be performed in support of the EE/CA and the Bioplume II® modeling effort.

Proposed site characterization activities include cone penetrometer testing and soil and groundwater sampling. Cone penetrometer testing, soil and groundwater sampling, and analytical protocols are described herein. Existing site-specific data and data collected during the supplemental site characterization activities described herein will be used as input for the Bioplume II® model. Detailed information on the unsaturated and saturated materials present at the site is available from several sources, including the draft FT-002 soil remedial investigation report prepared by ABB Environmental Services (ABB, 1992), the phase II groundwater remedial investigation report for the site prepared by ABB and URS Consultants, Inc. (ABB/URS, 1993), and the draft FT-002 groundwater operable unit feasibility study report prepared by URS (1993). These reports were used to develop an understanding of the potential nature and extent of contamination at the site, to develop a preliminary conceptual fate and transport model, and to supplement model input data.

This work effort will also represent an evolution in the intrinsic remediation program because proposed site characterization and modeling efforts will attempt to quantify the potential for co-metabolism of dissolved fuel-related components and chlorinated solvents at the site. Sensitivity analyses will be conducted for the parameters which are known (or suspected) to have the greatest influence on the results of the Bioplume II® model, and where possible, the model will be calibrated to historical site data. Upon completion of the Bioplume II® modeling effort, ES will provide technical assistance during regulatory negotiations to support the intrinsic remediation/long-term monitoring remedial option, if the results of the modeling indicate that this approach is appropriate. If it is shown that intrinsic remediation is not the most appropriate remedial option, ES will recommend the most appropriate groundwater remedial technology based on available data.

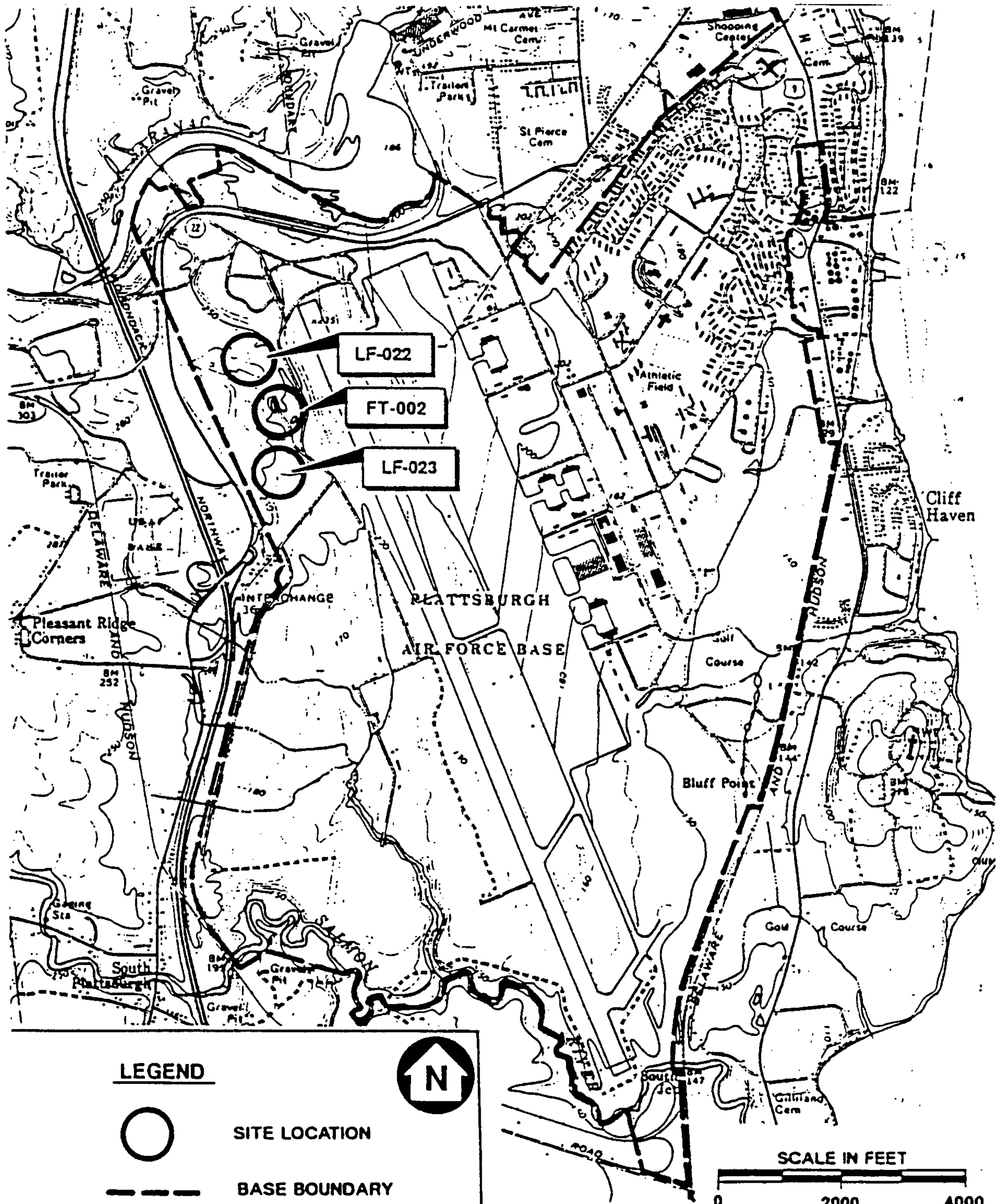
This work plan consists of six sections, including this introduction. Section 2 presents the existing site-specific data and a conceptual model for the site. Section 3 describes the proposed sampling strategy and procedures to be used for the collection of additional site characterization data. Section 4 describes the remedial option evaluation procedure and EE/CA report format. Section 5 describes the quality assurance/quality control (QA/QC) measures to be used during this project. Section 6 contains the references used in preparing this document. There are two appendices to this work plan. Appendix A contains a listing of the containers, preservatives, packaging, and shipping requirements for necessary site characterization samples. Appendix B contains a summary of existing soil and groundwater analytical data from previous field investigation work.

## 1.2 SITE BACKGROUND

Plattsburgh AFB is located in northeastern New York State and is bordered on the north by the City of Plattsburgh, on the south and west by the Town of Plattsburgh, and on the east by Lake Champlain. The base covers 4,795 acres, 3,365 of which are federally owned and controlled by the military, and 1,430 of which are registered as easement tracts (ABB/URS, 1993). Site FT-002 is approximately 700 feet wide and 800 feet long. The FT-002 site, formerly designated FT-001, is located approximately equidistant (500 feet) between the Plattsburgh AFB runway to the east and the base boundary to the west. Site FT-002 is located south of domestic waste landfill LF-022 and north of domestic waste/spent munitions landfill LF-023 (Figures 1.1 and 1.2). Previous remedial investigation studies indicated that these sites are not contributing an appreciable mass of contamination to groundwater affected by FT-002 operations; both source areas (LF-022 and LF-023) are to be covered under separate remedial action implementation programs to minimize exposure risks from the surface soil pathway.

Site FT-002 is situated in a limited-access area. Access from the east is restricted by the controlled-access areas of the active runway to the east; access from the west is somewhat less restricted, although the area is bounded by a 4-foot-high, three-wire fence. Access from the north and south is generally limited by the LF-022 and LF-023 areas, respectively. Figure 1.1 is a regional location map showing the position of FT-002 relative to Plattsburgh AFB and the surrounding area. Figure 1.2 is a site map showing FT-002 and the immediately adjacent area in detail.

Site FT-002 was used to train base fire-fighting personnel from the mid- to late-1950s until the site was permanently closed to fire training activities on May 22, 1989. During fire training exercises, fires were ignited in four fire training pits located in the FT-002 area. The pits usually were saturated with water before approximately 75 to 100 gallons of fuel was added and ignited. The fuel for the fire pits consisted mainly of waste jet fuel (JP-4) mixed with waste oil. Solvents and other chemicals were sometimes mixed with the fuel. A single training exercise usually consisted of four consecutive cycles of igniting and extinguishing fires in the training pits. Prior to the 1980s, a maximum of 2,000 gallons of fuel was burned each day during weekly fire training exercises (Radian, 1985). Previous site investigations have suggested training



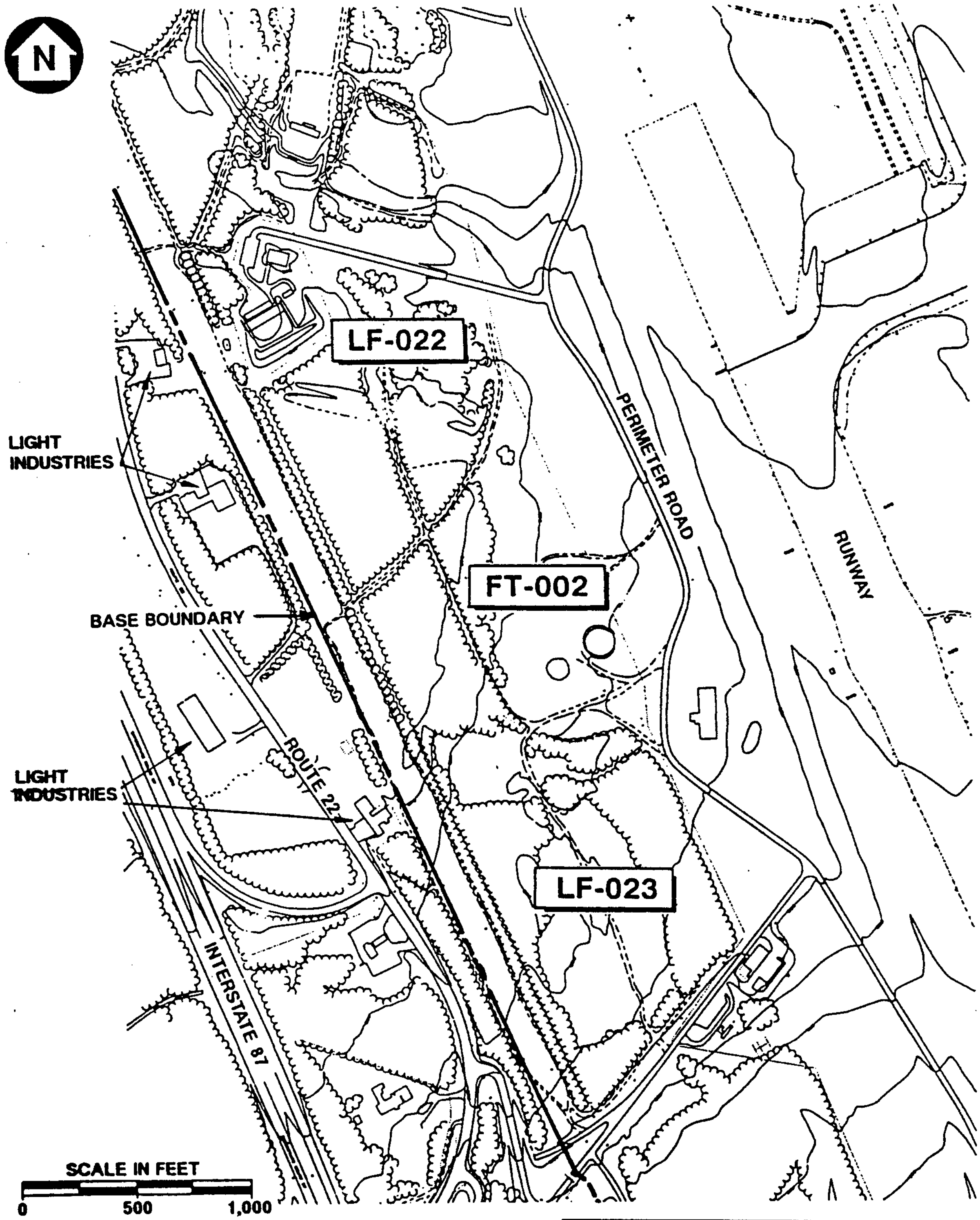

Source: ABB/URS, 1993.

**FIGURE 1.1**

**LOCATION OF FORMER FIRE TRAINING AREA FT-002**

EE/CA
Plattsburgh AFB, New York

**ENGINEERING-SCIENCE, INC.**
Denver, Colorado




Source: ABB/URS, 1993.

FIGURE 1.2

FT-002 SITE MAP

EE/CA
Plattsburgh AFB, New York

ENGINEERING-SCIENCE, INC.
Denver, Colorado

activities may also have been conducted in an area north and west of the pits (ABB/URS, 1993).

Several site investigations have been conducted since the spring of 1984 to support the characterization of potential soil and groundwater contamination. A preliminary assessment of the site was completed in 1985 (Radian, 1985); a site inspection (E.C. Jordan, Co., 1989a) and a phase I remedial investigation were completed in 1988 (E.C. Jordan, Co., 1990); a free-product recovery pilot test was conducted in 1989 (E.C. Jordan, Co., 1989b, 1991a); a drainage flow study was completed in 1990 (E.C. Jordan Co., 1991b); a soil remedial investigation was completed in 1991 (ABB, 1992); and a phase II groundwater remedial investigation was completed in 1991 (ABB/URS, 1993).

The results of these investigations indicate that the soil and groundwater associated with each fire training pit is contaminated with JP-4-related compounds and chlorinated solvents. The former storage tank and oil/water separator that served Pits 2 and 3 have also been identified as potential sources of soil and groundwater contamination. Free-phase product is also present in the capillary fringe and possibly floating on top of the groundwater table in some areas (e.g., downgradient of Pit 1, Pit 4, and the oil/water separator).

A previous removal action at the FT-002 site was conducted in 1989 to pump free-phase product located downgradient of Pit 1 (E.C. Jordan, 1990). Both active and passive product recovery systems were pilot tested. Data from the pilot tests demonstrated that product removal rates could not be predicted for any particular groundwater product pumping rate (E.C. Jordan, 1990). It is suspected that free-phase product is still present within the capillary fringe and floating on the groundwater table immediately underlying the FT-002 site.

The site-specific data and conceptual model presented in Section 2 are based on a review the results of the aforementioned investigations. A synopsis of site characterization activities conducted to date is provided in Chapter 1 of the phase II remedial investigation report prepared by ABB/URS (1993).

# SECTION 2

# DATA REVIEW AND CONCEPTUAL MODEL DEVELOPMENT

Existing site-specific data were used to develop a conceptual model of the groundwater flow system and the nature and extent of contamination at FT-002. This conceptual model will allow collection of additional data in an efficient manner to fill data gaps, to support the Bioplume II® modeling effort, and to evaluate potential remediation technologies. Sections 2.1 and 2.2 present a synopsis of available site data. Section 2.3 presents the preliminary conceptual groundwater flow and solute transport model which was developed based on these data.

## 2.1 DATA REVIEW

The reports cited in Section 1.2 and available regional data were reviewed, and relevant portions of these data are summarized in the following sections.

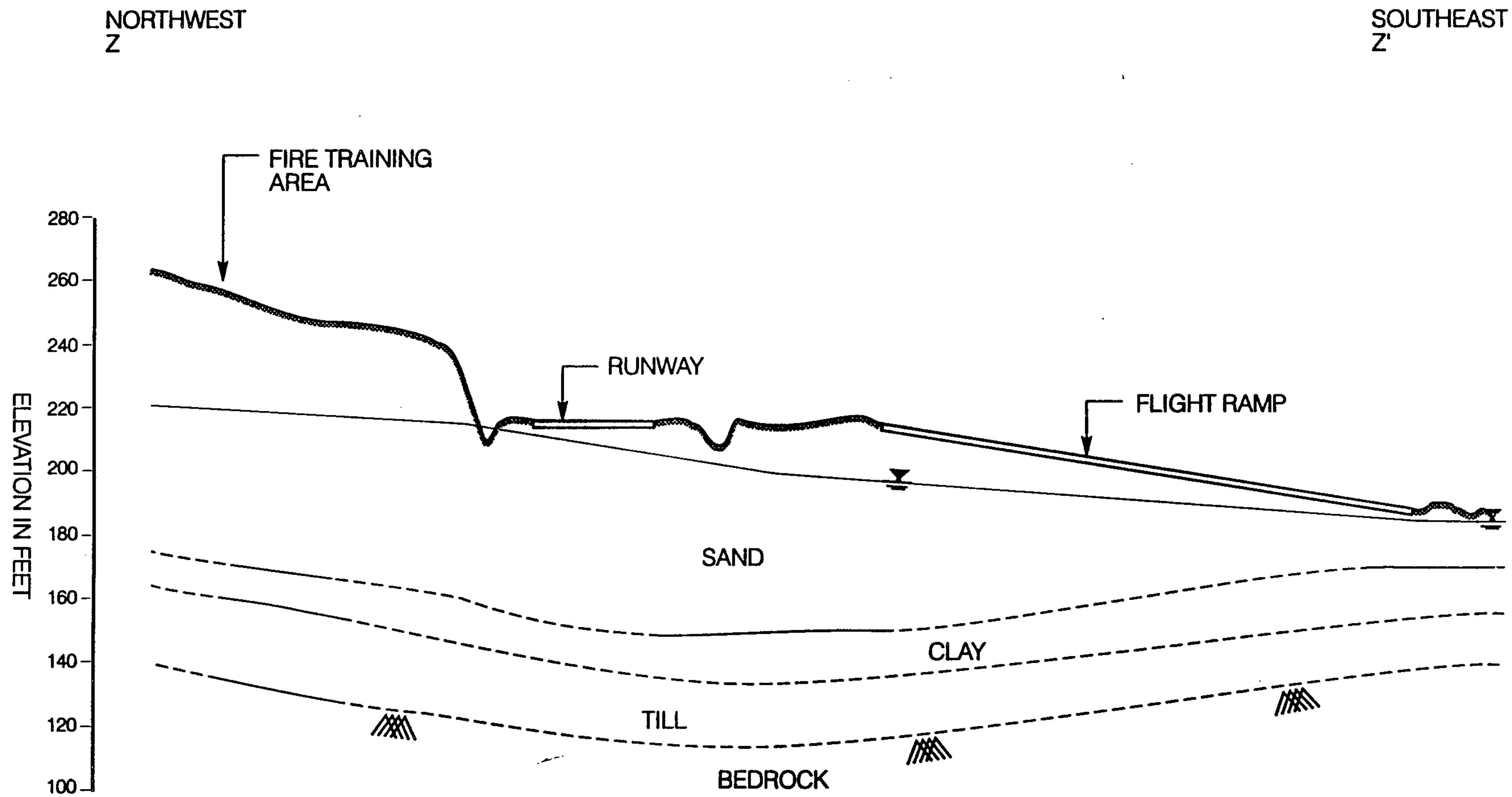
### 2.1.1 Site Geology and Hydrogeology

The surface topography of Plattsburgh AFB near FT-002 slopes gently eastward toward Lake Champlain and slightly southeastward toward the Saranac and Salmon Rivers, which border the base to the north and south, respectively. Both of these rivers affect the shallow groundwater flow system at Plattsburgh AFB.

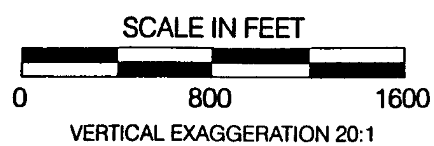
The topography in the vicinity of FT-002 was significantly altered by earth moving activities necessary to construct the nearby runway and flightline. The redistribution of soil during these activities created a steep hill just east of FT-002 and an ephemeral gully, which facilitates onsite drainage, between the runway and flightline. These surface modifications may affect groundwater flow and plume migration patterns at the site. The ephemeral gully contains water of probable groundwater origin which discharges into a stream west of the runway during periods of high groundwater levels; this stream flows south through the Weapons Storage Area within the boundaries of Plattsburgh AFB before discharging into the Salmon River.

Four distinct geologic units underlie the site: sand, clay, till, and bedrock. The sand unit generally extends from ground surface up to 90 feet below ground surface (bgs) in the vicinity of FT-002. A 7-foot-thick clay unit has been identified on the eastern side of the site; the thickness of the clay on the western side of FT-002 has not been determined. A 30- to 40-foot thick clay/till unit is also present from 80 to 105 feet bgs in the vicinity of FT-002. Bedrock is located approximately 120 feet bgs.

Three distinct hydrogeologic units have been identified beneath the FT-002 area. Figure 2.1 is a schematic of the subsurface environment at FT-002. Several seismic




Notes: 1) Bedrock surface inferred from seismic results.
2) Groundwater level 9/91 - 11/91




Source: ABB/URS, 1993.

**FIGURE 2.1**

**SCHEMATIC OF HYDROGEOLOGIC UNITS BENEATH FT-002**

EE/CA
Plattsburgh AFB, New York

**ENGINEERING-SCIENCE, INC.**
Denver, Colorado

refraction surveys, a soil boring program, and a cone penetrometer survey have been completed at the site to provide data necessary to characterize the subsurface environment (ABB/URS, 1993). These investigations indicate that the uppermost aquifer is unconfined and is comprised of well-sorted, medium- to fine-grained sand which extends from the surface to approximately 90 feet bgs on the west side of FT-002 and to approximately 20 feet bgs on the east side of the flightline. The depth to groundwater varies from 0 feet on the eastern side of the site to 35 feet bgs on the western side of the site.

The average horizontal hydraulic gradient along the flow lines emanating from FT-002 to 8,200 feet downgradient is approximately 0.010 foot/foot (ft/ft) toward the southeast (generally toward Lake Champlain). However, northern and southern components of flow also exist because of the effects of the Saranac and Salmon Rivers, respectively. Hydraulic conductivity for the shallow unconfined aquifer measured during *in situ* permeability testing for the FT-002 site ranged from 2.55 feet/day to 13.89 feet/day [$9.0 \times 10^{-4}$ to $4.9 \times 10^{-3}$ centimeters/second (cm/sec)], with a site average of 11.6 feet/day (Table 2.1). Using an average hydraulic gradient of 0.010 ft/ft (southeastward), and accounting for the variability in porosity in the upper aquifer (30 to 40 percent), the average groundwater seepage velocity in the FT-002 area is calculated to be between 0.29 foot/day and 0.38 foot/day in the southeastward direction. Vertical hydraulic gradients, which vary depending upon location within the aquifer, also are present at the site (Table 2.2). This variability in vertical gradient suggests possible local influences, such as the presence of groundwater surface discharge points and vertical subsurface heterogeneity (ABB/URS, 1993).

Several series of groundwater level (potentiometric) measurements have been taken during different years and seasons. These data suggest that there is minimal seasonal variation in groundwater flow direction at the site. Previous groundwater modeling activities conducted for the phase II remedial investigation used 1991 winter groundwater elevations to calibrate the model. Table 2.3 presents these data, and Figure 2.2 shows typical groundwater potentiometric contour lines.

Immediately underlying the shallow saturated zone is a series of aquitards and aquicludes consisting of silts, clays, and glacial tills which effectively isolate the shallow saturated zone from the deeper, confined bedrock aquifer. The combined thickness of the clay, silt, and till aquiclude has been estimated to be up to 60 feet. Although *in situ* permeability tests were not conducted on these confining materials, hydraulic conductivity values for this unit may be on the order of $10^{-7}$ cm/sec ($2.8 \times 10^{-4}$ foot/day) (Freeze and Cherry, 1979). Laboratory permeability studies on these materials support the conclusion that little or no appreciable hydrologic connection exists between the upper and lower (bedrock) aquifers, even after sustained exposure of the shallow aquifer to low concentrations of organic solvents such as trichloroethene (TCE) and trans-1,2-dichloroethene (1,2-DCE) (ABB/URS, 1993).

Underlying the confined silt and clay aquiclude is a bedrock aquifer. Although data on this lower aquifer were not collected during recent remedial investigations, early hydrogeologic studies in the region concluded that the bedrock aquifer consists of sandstone and crystalline rock to the west of Plattsburgh AFB and carbonate rock beneath Plattsburgh AFB (Giese and Hobba, 1970). This deep aquifer is confined by

**Table 2.1. Hydraulic Conductivity by Depth**
**EE/CA Workplan, Plattsburgh AFB**

| Well ID# | Test # | Depth(ft) | K (cm/sec) | K(avg) | K(ft/dy) | K(avg) | Unit |
|---|---|---|---|---|---|---|---|
| MW-02-004 | 1 | 35-45 | 0.0043 | 0.004 | 12.18 | 11.19 | sand |
| | 2 | 35-45 | 0.0036 | | 10.2 | | sand |
| MW-02-019 | 1 | 9-24 | 0.038 | 0.038 | 107.7 | 107.7 | sand |
| | 2 | 9-24 | 0.038 | | 107.7 | | sand |
| MW-02-020 | 1 | 30-40 | 0.0039 | 0.0039 | 11.05 | 11.05 | sand |
| | 2 | 30-40 | 0.0039 | | 11.05 | | sand |
| MW-02-021 | 1 | 7-17 | 0.00013 | 0.0001 | 11.05 | 0.397 | sand |
| | 2 | 7-17 | 0.00015 | | 4.25 | | sand |
| MW-02-022 | 1 | 20-30 | 0.00014 | 0.0001 | 0.397 | 0.397 | sand |
| | 2 | 20-30 | 0.00014 | | 0.397 | | sand |
| MW-02-030 | 1 | 46-55 | 0.001 | 0.0011 | 2.83 | 2.98 | sand |
| | 2 | 46-55 | 0.0011 | | 3.12 | | sand |
| MW-02-033 | 1 | 81-91 | 0.00007 | 0.0000 | 0.198 | 0.2 | silty sand/clay interface |
| | 2 | 81-91 | 0.000068 | | 0.193 | | silty sand/clay interface |
| | 3 | 81-91 | 0.000074 | | 0.21 | | silty sand/clay interface |
| MW-02-035 | 1 | 74-84 | 0.00019 | 0.0002 | 0.539 | 0.282 | silty sand/clay interface |
| | 2 | 74-84 | 0.00022 | | 0.624 | | silty sand/clay interface |
| MW-02-036 | 1 | 28-43 | 0.009 | 0.0088 | 25.51 | 24.8 | sand |
| | 2 | 28-43 | 0.0085 | | 24.09 | | sand |
| MW-02-037 | 1 | 25-35 | 0.003 | 0.0028 | 8.5 | 7.8 | sand |
| | 2 | 25-35 | 0.0025 | | 7.09 | | sand |
| MW-02-038 | 1 | 45-55 | 0.00057 | 0.0005 | 1.62 | 1.59 | sand |
| | 2 | 45-55 | 0.00055 | | 1.56 | | sand |
| MW-02-039 | 1 | 40-50 | 0.0037 | 0.004 | 10.49 | 11.2 | sand |
| | 2 | 40-50 | 0.0042 | | 11.9 | | sand |
| MW-02-040 | 1 | 20-30 | 0.0034 | 0.0035 | 9.64 | 9.78 | sand |
| | 2 | 20-30 | 0.0034 | | 9.64 | | sand |
| MW-02-041 | 1 | 35-45 | 0.0026 | 0.0027 | 7.37 | 7.51 | sand |
| | 2 | 35-45 | 0.0027 | | 7.65 | | sand |
| MW-02-042 | 1 | 52-62 | 0.0006 | 0.0006 | 1.7 | 1.7 | sand |
| | 2 | 52-62 | 0.0006 | | 1.7 | | sand |
| MW-02-043 | 1 | 15-25 | 0.00038 | 0.0003 | 1.08 | 1.08 | sand |
| | 2 | 15-25 | 0.00038 | | 1.08 | | sand |
| MW-02-044 | 1 | 19-29 | 0.0011 | 0.0012 | 3.12 | 3.26 | sand |
| | 2 | 19-29 | 0.0012 | | 3.4 | | sand |
| MW-02-045 | 1 | 13-24 | 0.00048 | 0.0004 | 1.36 | 1.39 | silty sand/clay interface |
| | 2 | 13-24 | 0.0005 | | 1.42 | | silty sand/clay interface |
| MW-02-046 | 1 | 36-46 | 0.0068 | 0.0062 | 19.27 | 17.67 | silty sand/clay interface |
| | 2 | 36-46 | 0.0075 | | 21.26 | | silty sand/clay interface |
| | 3 | 36-46 | 0.0044 | | 12.47 | | silty sand/clay interface |
| MW-02-047 | 1 | 26-36 | 0.0065 | 0.0063 | 18.42 | 17.71 | sand |
| | 2 | 26-36 | 0.006 | | 17 | | sand |
| MW-02-048 | 1 | 6-21 | 0.0067 | 0.0061 | 18.99 | 17.29 | silty sand/clay interface |
| | 2 | 6-21 | 0.0055 | | 15.59 | | silty sand/clay interface |
| MW-02-049 | 1 | 26-36 | 0.0004 | 0.0004 | 1.13 | 1.21 | sand |
| | 2 | 26-36 | 0.00045 | | 1.28 | | sand |
| MW-04-001 | 1 | 6-11 | 0.00013 | 0.0001 | 0.368 | 0.368 | sand |
| | 2 | 6-11 | 0.00013 | | 0.368 | | sand |
| MW-11-009 | 1 | 24-34 | 0.002 | 0.0024 | 5.67 | 6.8 | sand |
| | 2 | 24-34 | 0.0028 | | 7.94 | | sand |
| MW-13-002 | 1 | 15-25 | 0.00069 | 0.0006 | 1.96 | 1.96 | silty sand/clay interface |
| | 2 | 15-25 | 0.00069 | | 1.96 | | silty sand/clay interface |
| MW-16-001 | 1 | 10-20 | 0.012 | 0.012 | 34.01 | 34.01 | sand |
| | 2 | 10-20 | 0.012 | | 34.01 | | sand |
| **Overall average** | | | **0.0041** | | **11.62** | | |

Source: ABB/URS, 1993

**Table 2.2. Vertical Hydraulic Gradients**
**EE/CA Workplan, Plattsburgh AFB**

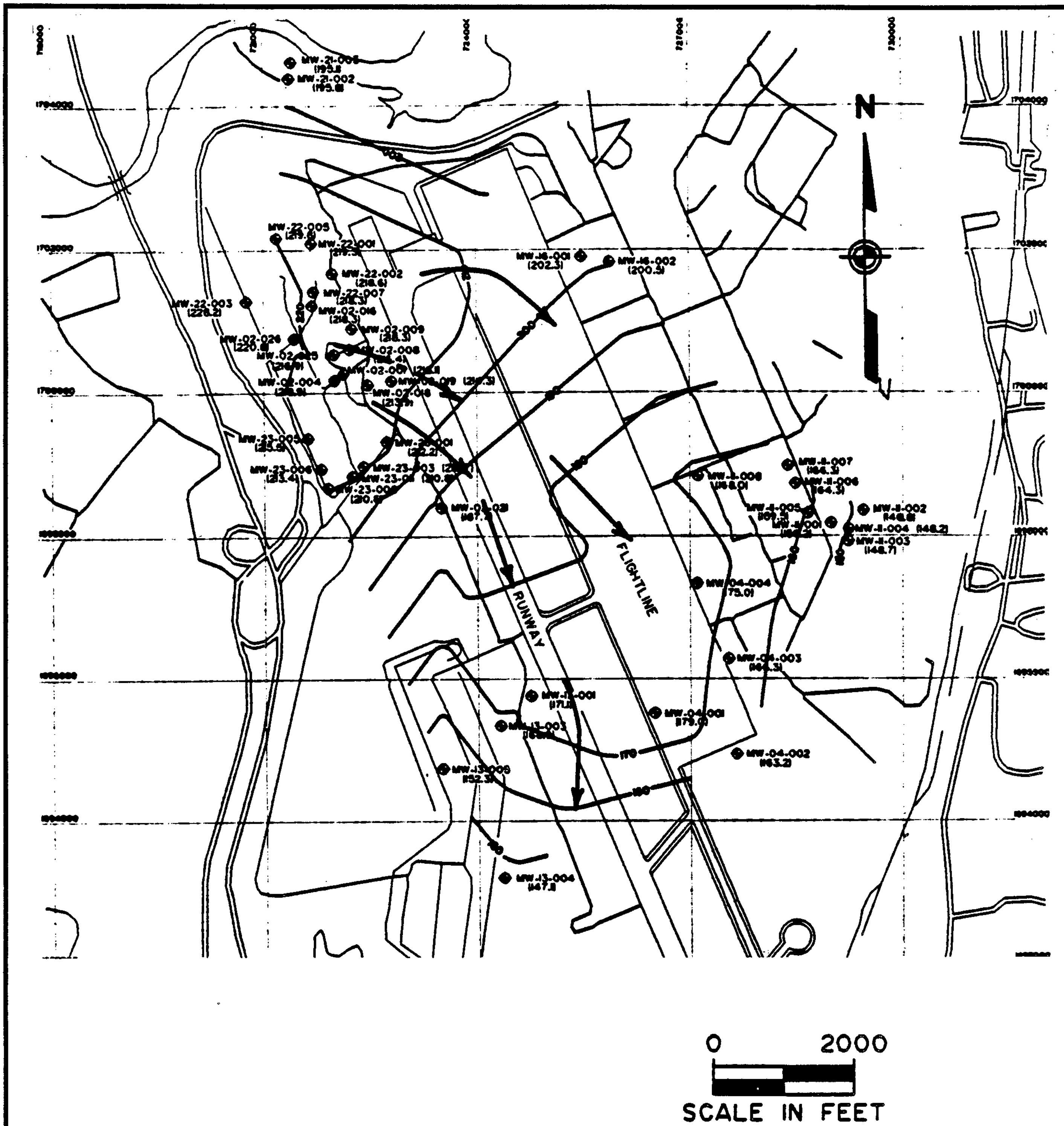
| Well ID# | Depth (ft) | Vertical Hydraulic Gradient (ft/ft) | | |
|---|---|---|---|---|
| | | 1/19/89 | 10/91 | 11/19/91 |
| MW-02-021 | 179.6 | NA | 0.0066 | 0.013 |
| MW-02-022 | 154.5 | | | |
| MW-02-019 | 211.7 | -0.152 | -0.152 | -0.152 |
| MW-02-020 | 192.6 | -0.013 | -0.0064 | -0.006 |
| MW-02-030 | 177 | | | |
| MW-02-037 | 197.9 | NA | -0.005 | -0.005 |
| MW-02-038 | 177.8 | | | |
| MW-04-006 | 186.4 | NA | 0.0073 | NA |
| MW-02-023 | 159 | | | |
| MW-02-040 | 184.4 | NA | -0.133 | 0.112 |
| MW-02-041 | 170.1 | NA | 0.028 | 0.011 |
| MW-02-042 | 152.3 | | | |

Source: ABB/URS, 1993

**Table 2.3. Potentiometric Measurements Used in Previous Groundwater Modeling Efforts**

| Well ID# | Coordinates East (ft) | North (ft) | MSL (ft) |
|---|---|---|---|
| MW-02-004 | 721997 | 1700173 | 217.5 |
| MW-02-009 | 722238 | 1700897 | 217.6 |
| MW-02-022 | 723497 | 1698381 | 187.3 |
| MW-02-026 | 721429 | 1700757 | 218.9 |
| MW-02-030 | 722809 | 1700173 | 213.3 |
| MW-04-001 | 726018 | 1695517 | 179.4 |
| MW-04-002 | 727638 | 1694950 | 163.2 |
| MW-04-003 | 727537 | 1696283 | 166.3 |
| MW-04-004 | 727094 | 1697345 | 174.9 |
| MW-04-005 | 726453 | 1698997 | 189.1 |
| MW-04-006 | 725097 | 1698724 | 190.9 |
| MW-11-002 | 729438 | 1698348 | 146.8 |
| MW-11-009 | 728811 | 1698193 | 156.6 |
| MW-13-002 | 724729 | 1695762 | 171.2 |
| MW-13-003 | 724308 | 1695344 | 168.9 |
| MW-13-004 | 724351 | 1693198 | 147.1 |
| MW-13-005 | 723495 | 1694742 | 152.3 |
| MW-16-001 | 725474 | 1701900 | 202.4 |
| MW-21-001 | 720969 | 1704131 | 209.5 |
| MW-21-003 | 721399 | 1704613 | 195.1 |
| MW-22-001 | 721676 | 1702094 | 219.3 |
| MW-22-002 | 721967 | 1701673 | 218.6 |
| MW-22-004 | 720758 | 1701269 | 228.2 |
| MW-22-006 | 721198 | 1702160 | 219.8 |
| MW-23-001 | 722724 | 1699319 | 211.8 |
| MW-23-004 | 721656 | 1699883 | 217.8 |
| MW-23-005 | 721870 | 1699370 | 215.5 |
| MW-23-010 | 722208 | 1698564 | 210.1 |
| PZ13S | 730135 | 1705500 | 159.2 |
| PZ12S | 728755 | 1701324 | 170.4 |
| PZ2S | 726130 | 1702584 | 197.8 |
| PZ3S | 720682 | 1701868 | 232.9 |
| PZ11S | 728299 | 1699570 | 168.6 |
| MW-17-005 | 727817 | 1698347 | 169.2 |
| C | 727331 | 1698454 | 175.8 |
| MW-05-003 | 727251 | 1699445 | 183.9 |
| MW-06-001 | 726426 | 1700080 | 193.1 |
| PZ8S | 728691 | 1692547 | 152.7 |
| MW-07-003 | 728356 | 1691506 | 149.7 |
| MW-07-004 | 727879 | 1691666 | 153.3 |
| PZ7S | 726303 | 1694521 | 174 |
| PZ4S | 721290 | 1695294 | 176.6 |
| PZ6S | 725282 | 1691585 | 165.1 |

Source: ABB/URS, 1993




**LEGEND**

- MONITORING WELL
- GENERAL GROUNDWATER FLOW DIRECTION
- —20— GROUNDWATER ELEVATION CONTOURS

NOTE:
GROUNDWATER ELEVATIONS BASED UPON STEADY STATE AVERAGE OF DATA FROM 12/87, 1/89, 9/91-10/91, AND 11/91: SEE APPENDIX H.

Source: ABB/URS, 1993.

FIGURE 2.2

POTENTIOMETRIC CONTOUR MAP FOR FT-002

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the overlying clay and till layers, although there is some evidence that upward vertical gradients may cause groundwater in the lower, confined aquifer to leak upward into the shallow, unconfined aquifer.

### 2.1.2 Soil Quality

Subsurface soil samples were collected during previous investigations to evaluate the nature and extent of contamination in the subsurface. Sampling continued outward from the center of each area until fuel-related contamination was not detected in the composite samples. Fuel-related compounds and solvents are the primary contaminants at FT-002. During training activities, the soil beneath the pits became saturated with fuels and solvents, and the contaminants migrated downward. Because the fuel/solvent mixture is lighter than water, the downward migration of the contaminants was halted at the groundwater table. Trapped free-phase product, consisting primarily of jet fuel (JP-4) with small amounts of TCE and 1,2-DCE, slowly dissolves into the groundwater, becoming a continuing source of groundwater contamination.

Analyses of subsurface soil samples suggest a general contaminant distribution pattern. Below the pits, concentrations of fuel-related compounds [e.g., petroleum hydrocarbons (PHCs) and polynuclear aromatic hydrocarbons (PAHs)] are seen generally to increase with depth, reaching their highest levels near the groundwater table. Within the zone of groundwater table fluctuation, soil contamination has spread laterally. This lateral spread is likely attributable to the physical and chemical properties of the contaminants, and the resistance to further vertical migration due to the increased moisture content in the soil pores, first in the capillary fringe, and then in the saturated zone. This zone is likely limited to within 5 feet of the seasonally low groundwater table level.

Chemical constituents, including volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) were detected in subsurface soils within and adjacent to the FT-002 site. The primary VOCs found within the subsurface soils at FT-002 are the solvents TCE and DCE and the fuel-related compounds benzene, toluene, ethylbenzene, and xylenes (BTEX). The primary SVOCs detected in subsurface soils are naphthalene, 2-methylnapthalene, and four phenolics (i.e., phenol, 2-methylphenol, 4-methylphenol, and 2,4-dimethylphenol). Typically, VOC contamination is found several feet below the ground surface rather than in surface soils. Figure 2.3 is a schematic of the lateral extent of soil contamination at FT-002. Appendix B contains analytical data from previous soil investigations.

### 2.1.3 Groundwater Quality and Chemistry

Groundwater at FT-002 contains a plume of dissolved-phase fuel-related compounds and chlorinated solvents. These plumes originate at FT-002 and extend downgradient toward the runway and taxiway to the east. Based on the distribution of contaminant concentrations, the dissolved-phase plume can be separated into an inner zone called the core plume and an outer, peripheral area. Both the core and peripheral areas of the plume are limited to the shallow, unconfined aquifer at the site. Previous investigations at FT-002 (ABB/URS, 1993) divided the contaminant plume into two zones based on contaminant distribution. For the purposes of the EE/CA, the plume present near FT-002 has been divided into two components based on concentration of

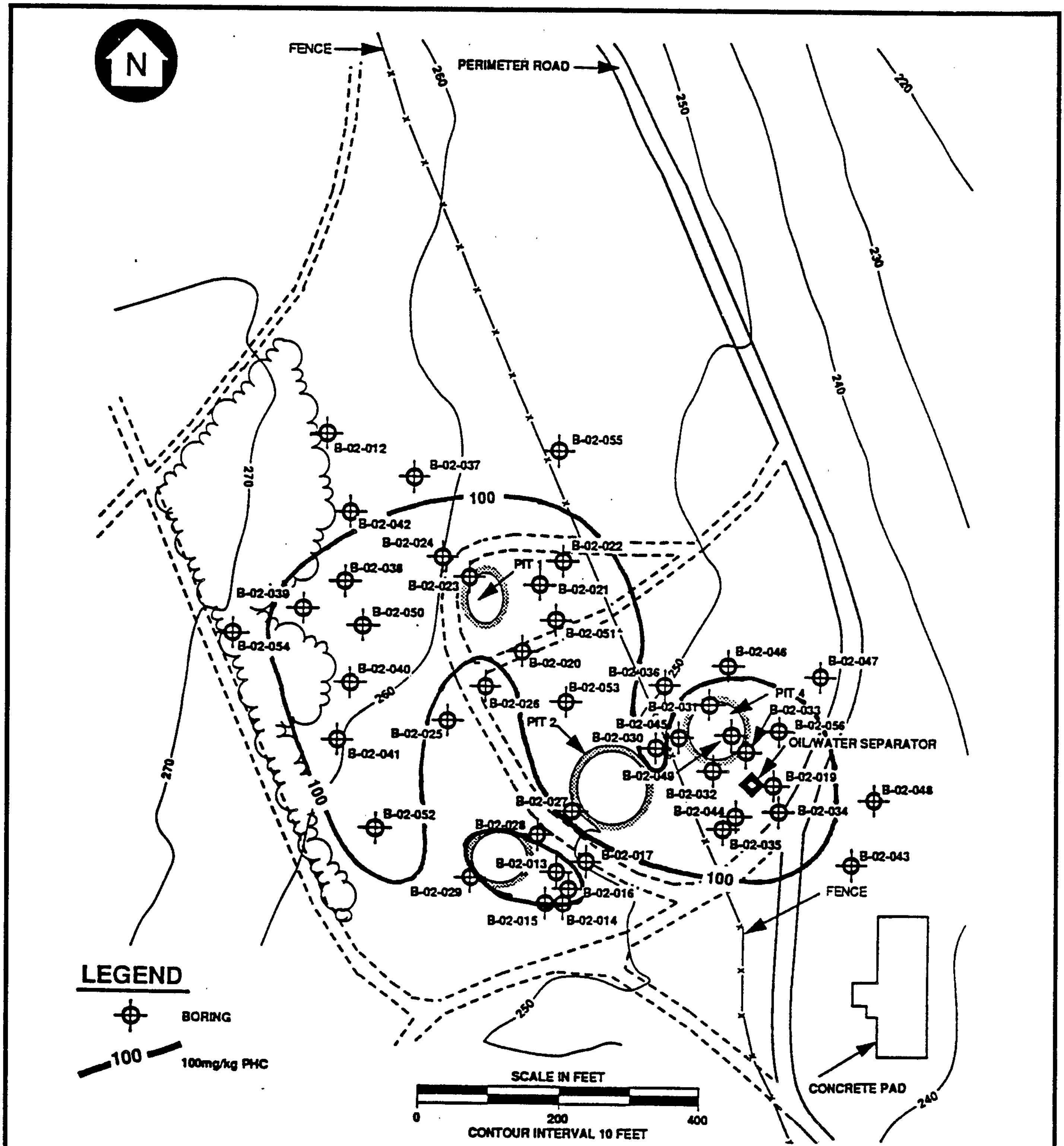


FIGURE 2.3

EXTENT OF LATERAL SOIL CONTAMINATION

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Denver, Colorado

Source: ABB/URS, 1993.

contaminants: the core, which is generally defined by wells that have VOC concentrations greater than 1,000 micrograms per liter ($\mu$g/L), and the periphery of the core plume, which is defined by downgradient wells with a VOC concentration less than 1,000 $\mu$g/L. These zones are referred to as the core plume and the periphery plume, and are schematically illustrated in Figure 2.4. These two zones are discussed in the following sections.

A total of 49 groundwater monitoring wells were installed during previous site investigations. Data from eight additional groundwater monitoring wells, which are located in other sites, are also used to delineate the FT-002 groundwater plume. Figures 2.5a and b show the location of the groundwater monitoring wells within and outside of the FT-002 plume, respectively. Several of these wells contained free product during previous site investigations.

HydroPunch® groundwater samples were also collected in 1990 to evaluate the presence of VOCs (ABB/URS, 1993). Further, a total of 117 groundwater samples were collected at 8- to 15-foot intervals from the 39 cone penetrometer locations associated with the FT-002 remedial investigations. These samples were analyzed for various chlorinated solvents and fuel-related hydrocarbons, including benzene, toluene, ethylbenzene, m/p-xylene, o-xylene, trans-1,2-DCE, cis-1,2-DCE, TCE, and tetrachloroethene (PCE). Appendix B contains sampling locations and results of these sampling efforts.

#### 2.1.3.1 Core Plume

The primary contaminants associated with the core of the plume are the solvents TCE and DCE and the fuel-related BTEX compounds. Ten other VOCs have also been detected in core plume groundwater samples and are considered site contaminants; these VOCs are listed in Table 2.4 with relevant concentration and comparison data.

The primary SVOCs detected in groundwater from the core of the plume are naphthalene and four phenolic compounds (phenol, 2-methylphenol, 4-methylphenol, and 2,4-dimethylphenol). The fuel-related compound 2-methylnapthalene is also considered a core plume contaminant (Table 2.4).

The core groundwater plume in the upper unconfined aquifer also contains significant concentrations of 12 inorganic analytes detected above background concentrations. These inorganic analytes include aluminum, arsenic, calcium, chromium, iron, lead, magnesium, manganese, nickel, potassium, sodium, and zinc. Because these analytes have been detected above background concentrations, they are considered site contaminants. Magnesium, potassium, and sodium are probably not directly attributable to activities at the FT-002 site. Modeling activities in support of the intrinsic remediation option will only consider organic contaminants.

#### 2.1.3.2 Plume Periphery

Several VOCs, SVOCs, and above-background metals concentrations are present in the periphery of the plume. A list of these contaminants, including key concentration and comparison data, is presented in Table 2.5. In summary, DCE and TCE are the primary VOC contaminants in the peripheral groundwater plume. Four other compounds, vinyl chloride, acetone, carbon disulfide, and 1,2-dichloroethane, are

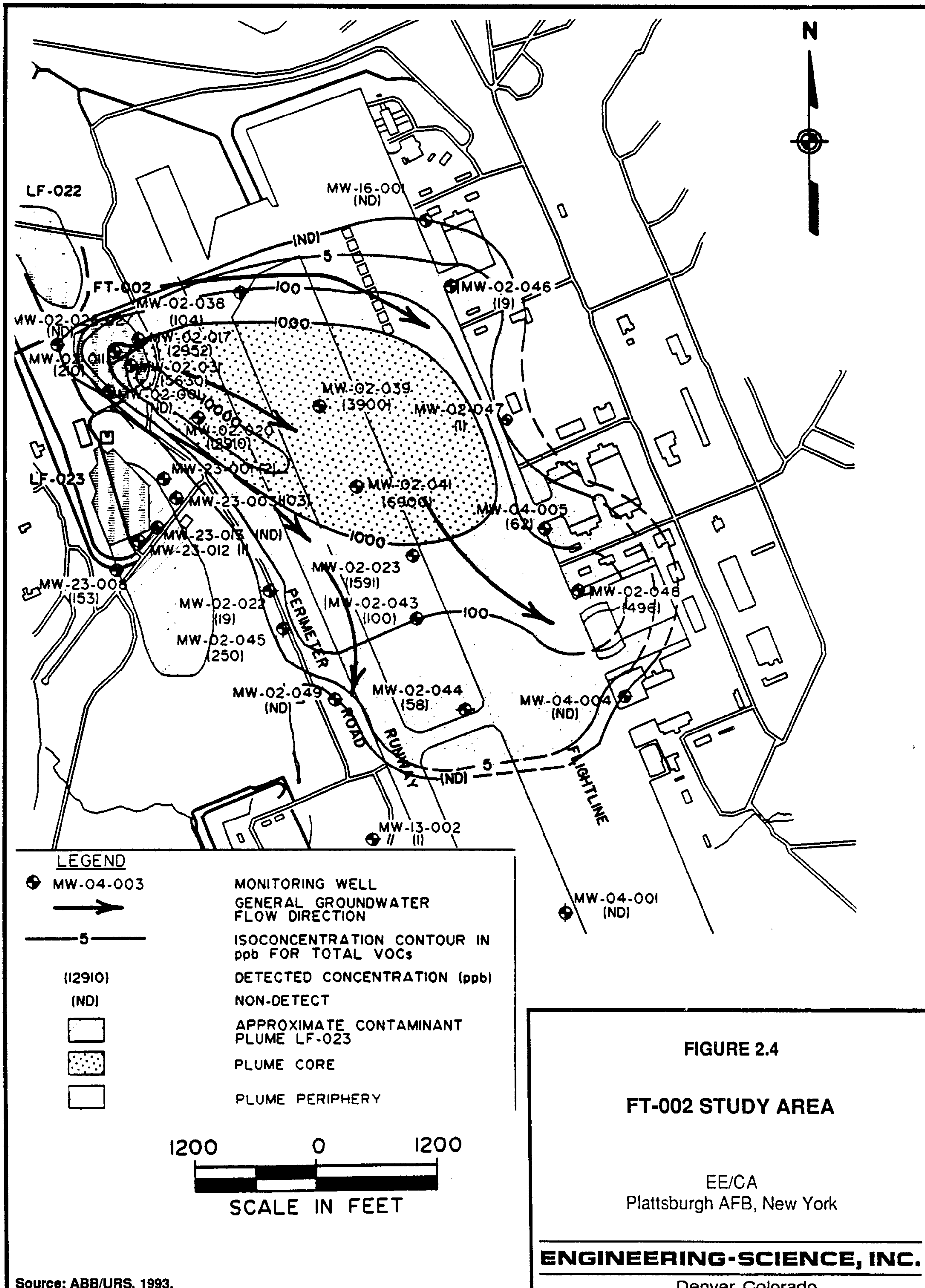


**FIGURE 2.4**

**FT-002 STUDY AREA**

EE/CA
Plattsburgh AFB, New York

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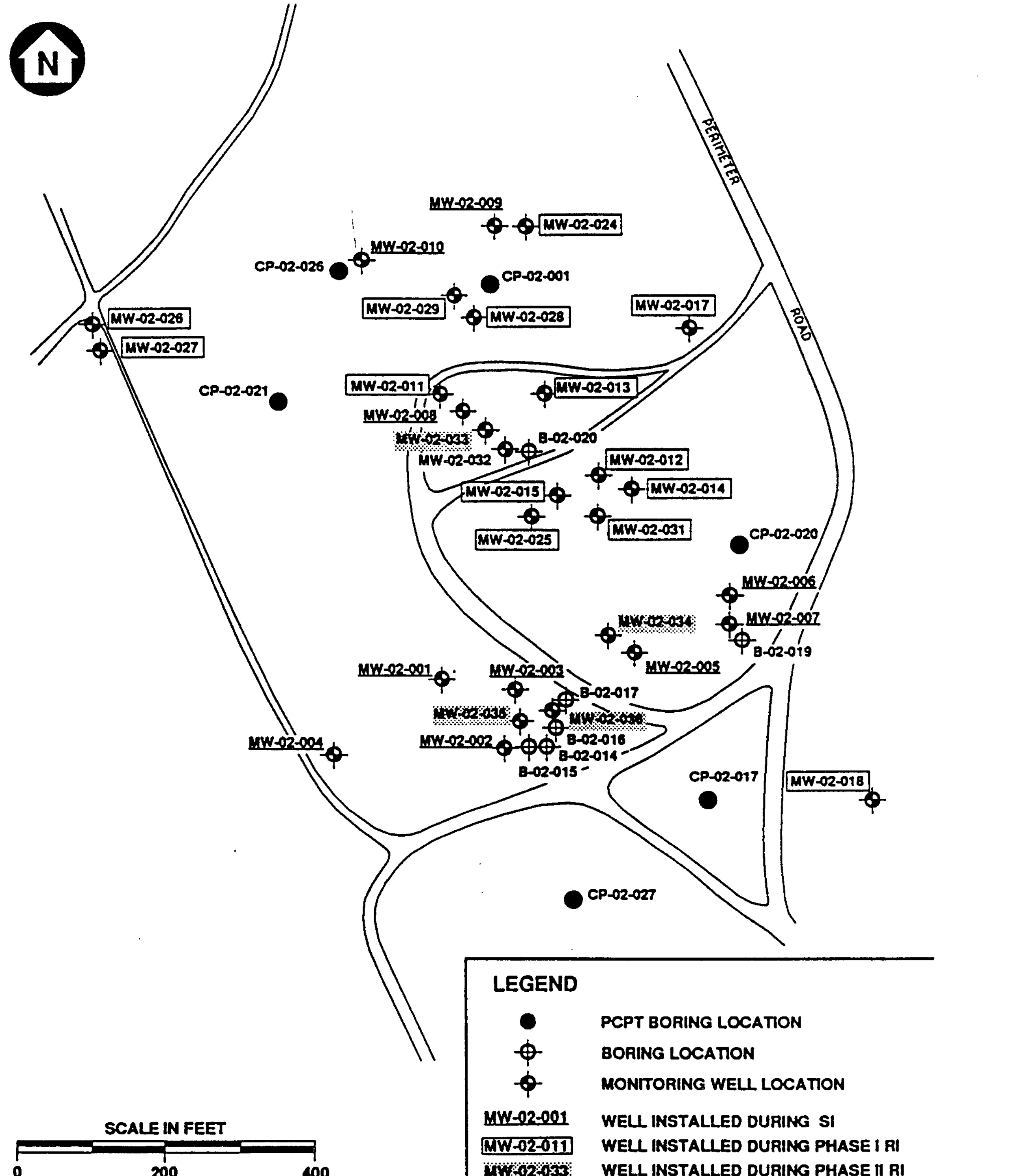


Source: ABB/URS, 1993.

FIGURE 2.5a

LOCATION OF EXISTING GROUND WATER MONITORING WELLS WITHIN FT-002

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Plattsburgh AFB, New York

ENGINEERING-SCIENCE, INC.
Denver, Colorado

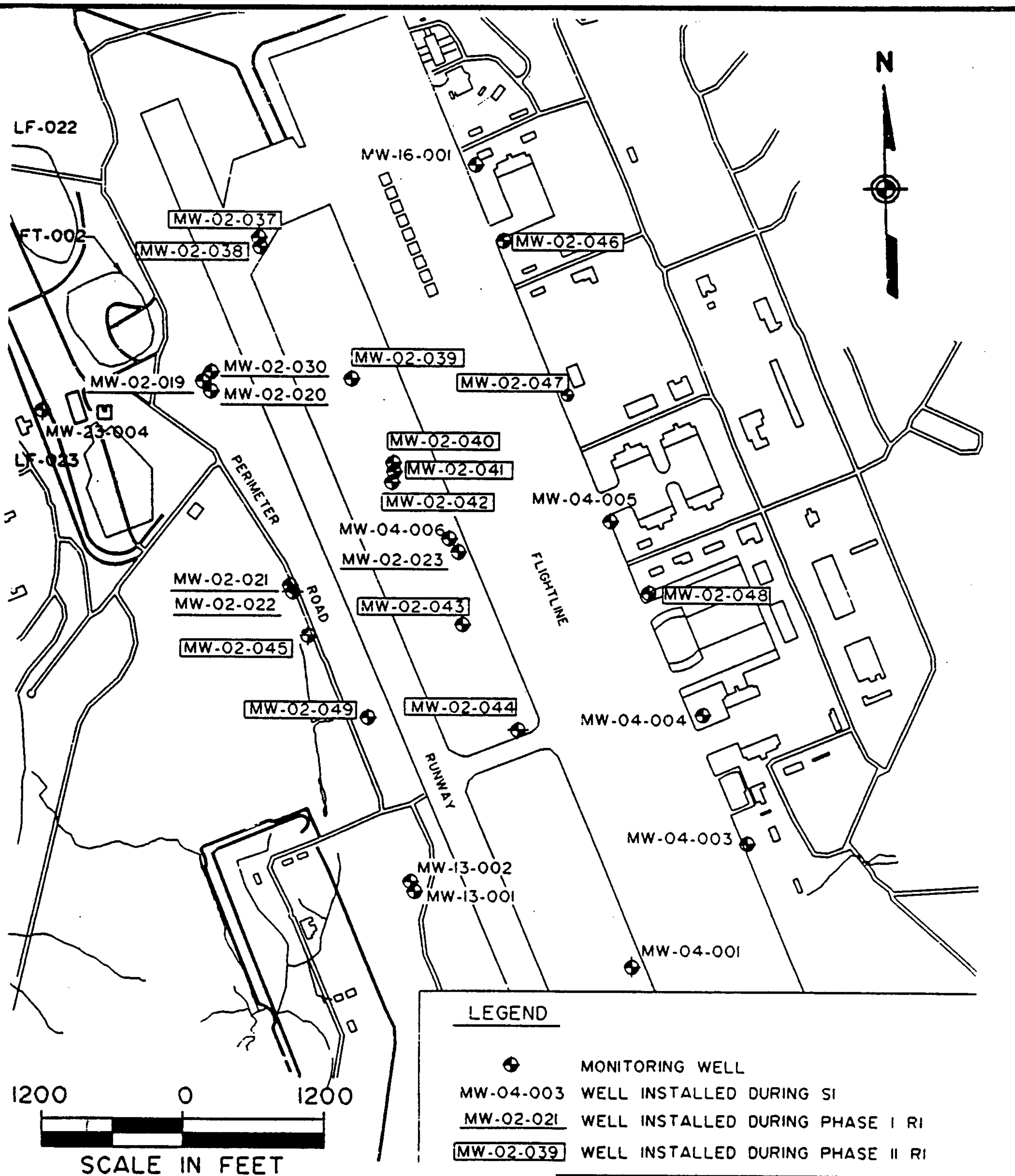


**FIGURE 2.5b**

**LOCATION OF EXISTING GROUND WATER MONITORING WELLS OUTSIDE FT-002**

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Plattsburgh AFB, New York

**ENGINEERING-SCIENCE, INC.**
Denver, Colorado

**Source: ABB/URS, 1993.**

**Table 2.4. Summary of Organic Groundwater Contamination (Focus on Plume Core), Plattsburgh AFB**

| Analyte | Background (ug/L) | Minimum (ug/L) | Maximum (ug/L) | Chemical-specific ARAR (ug/L) | Freq. detect? | Well ID# (max value) |
|---|---|---|---|---|---|---|
| 1,1-dichloroethene (DCE) | ND | 2 | 140 | 5 | 2/51 | CP-02-020 |
| 1,2-dichlorobenzene | ND | 1200 | 1200 | 4.7 | 1/38 | MW-02-003 |
| 1,2-dichloroethane (DCA) | ND | 45 | 45 | 5 | 1/51 | CP-02-020 |
| 1,2-dichloroethene (total) | ND | 7 | 18000 | 5 | 27/51 | CP-02-020 |
| 1,2-trichloroethane (TCA) | ND | 19 | 19 | 5 | 1/51 | CP-02-020 |
| 2,4-dimethylphenol | ND | 12 | 98 | 1 | 8/38 | MW-02-020 |
| 2-butanone | 103 | 11 | 690 | 50 | 9/51 | MW-02-007 |
| 2-chlorophenol | ND | 70 | 130 | 1 | 1/38 | MW-02-041 |
| 2-hexanone | ND | 96 | 96 | 50 | 1/51 | CP-02-020 |
| 2-methylnapthalene | ND | 14 | 9600 | 50 | 11/38 | MW-02-003 |
| 2-methylphenol | ND | 10 | 17 | 1 | 3/38 | MW-02-020 |
| 4-chloro-3-methylphenol | ND | 26 | 42 | 1 | 1/38 | MW-02-041 |
| 4-methyl-2-pentanone | ND | 70 | 70 | 50 | 1/51 | CP-02-020 |
| 4-methylphenol | ND | 18 | 140 | 1 | 8/38 | MW-02-020 |
| 4-nitrophenol | ND | 100 | 150 | 1 | 1/38 | MW-02-041 |
| Acenaphtene | ND | 780 | 780 | 20 | 1/38 | MW-02-003 |
| Acetone | 23 | 11 | 19 | 50 | 2/51 | B-02-014 |
| Benzene | ND | 3 | 720 | 0.7 | 13/51 | MW-02-031 |
| Carbon disulfide | ND | 1 | 280 | 50 | 3/51 | CP-02-020 |
| Chlorobenzene | ND | 7 | 7 | 5 | 1/51 | MW-02-030 |
| Ethylbenzene | ND | 7 | 1400 | 5 | 20/51 | MW-02-006 |
| Methylene chloride | ND | 11.5 | 20 | 5 | 1/51 | B-02-014 |
| Napthalene | ND | 26 | 3700 | 9 | 11/38 | MW-02-003 |
| Pentachlorophenol | ND | 95 | 140 | 1 | 1/38 | MW-02-041 |
| Phenanthrene | ND | 1700 | 1700 | 50 | 1/38 | MW-02-003 |
| Phenol | ND | 10 | 110 | 1 | 4/38 | MW-02-041 |
| Tetrachloroethene (PCE) | ND | 5 | 52 | 5 | 2/51 | MW-02-017 |
| Toluene | ND | 15 | 4200 | 5 | 16/51 | MW-02-025 |
| Total xylenes | ND | 6 | 13000 | 5 | 24/51 | MW-02-003 |
| Trichloroethene (TCE) | ND | 4 | 3900 | 5 | 18/51 | MW-02-039 |
| bis(2-ethylhexyl)phthalate | 85 | 13 | 1100 | 50 | 6/38 | MW-02-003 |

Source: ABB/URS, 1993

**Table 2.5. Summary of Organic Groundwater Contamination (Focus on Periphery Plume), Plattsburgh AFB**

| Analyte | Background (ug/L) | Minimum (ug/L) | Maximum (ug/L) | Chemical-specific ARAR (ug/L) | Freq. detect? | Well ID# (max value) |
|---|---|---|---|---|---|---|
| 1,1-dichloroethene (DCE) | ND | 3 | 3 | 5 | 1/17 | CP-02-010 |
| 1,2,4-trichlorobenzene | ND | 14 | 14 | 5 | 1/13 | MW-02-040 |
| 1,2-dichloroethane | ND | 7 | 7 | 5 | 1/17 | CP-02-010 |
| 1,2-dichloroethene (total) | ND | 1 | 1 | 5 | 12/17 | MW-02-040 |
| Acetone | 23 | 130 | 130 | 50 | 1/17 | MW-02-020 |
| Carbon disulfide | ND | 9 | 110 | 50 | 2/17 | CP-02-010 |
| Trichloroethene (TCE) | ND | 2 | 2 | 5 | 11/17 | MW-02-040 |
| Vinyl chloride | ND | 6 | 6 | 2 | 1/17 | CP-02-010 |

Source: ABB/URS, 1993

considered peripheral-area groundwater contaminants. These compounds are consistent with compounds detected in the source soil area and the free product, and with compounds reported in FT-002 historical operations data. In contrast to the core of the plume, however, 1,2,4-trichlorobenzene is the only SVOC detected in samples from the periphery of the plume.

Eleven inorganic analytes were detected in the periphery of the plume at concentrations exceeding corresponding background concentrations. In general, the inorganic contaminants detected in the peripheral plume appear to be attributable to FT-002 operations based upon background comparisons. However, the wells in which the highest concentrations of inorganic analytes were detected are at the edges of the plume where concentrations of primary organic contaminants are the lowest.

### 2.1.4 Receiving Surface Water Quality and Chemistry

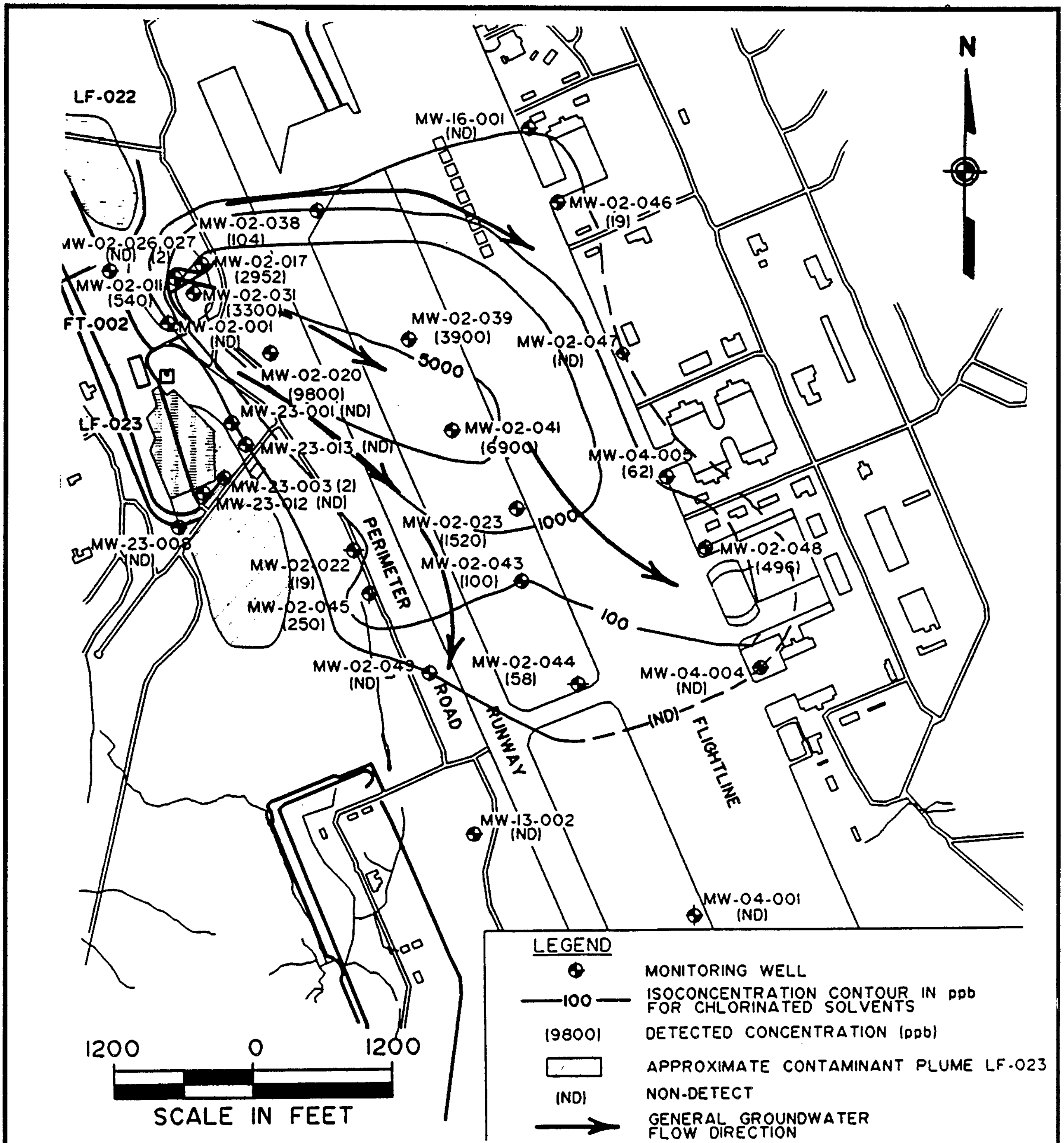
Groundwater discharges into surface water bodies at two locations at the FT-002 site: the stream located in the topographic low in the southwestern portion of the base, and the drainageway between the runway and flightline. TCE and DCE have been detected in samples from the gully outfall at concentrations ranging from 5 to 55 $\mu$g/L and 5 to 110 $\mu$g/L, respectively. TCE and DCE have also been detected in the receiving stream at concentrations of 5 and 11 $\mu$g/L, respectively (ABB/URS, 1993). The consistency of these measured concentrations indicate that groundwater from the FT-002 dissolved contaminant plume may be discharging into the drainageway between the flightline and runway, from which it is being diverted to the stream.

## 2.2 EXTENT OF CONTAMINATION

As discussed previously, two general types of contaminants are present in the subsurface soils and groundwater at the FT-002: fuel-related BTEX compounds and chlorinated solvents (primarily TCE and DCE). The vertical and horizontal extent and concentrations of these two types of contaminants differ significantly, possibly as a result of differences in source loading and transport and fate properties. Based on existing site data (both groundwater and cone penetrometer data), the nature and extent of the BTEX and chlorinated solvent plumes are discussed separately in detail below.

### 2.2.1 Extent of Chlorinated Solvent Plume

The core of the chlorinated solvent plume extends southeast from FT-002 beneath the runway, approximately 3,500 feet from the source area (Figures 2.6a and b). The remaining portions of the plume have spread laterally due to groundwater flow processes (with a maximum lateral spread of about 2,500 feet downgradient of the source area). Chlorinated solvent concentrations define the horizontal extent of the total plume, which extends about 5,500 feet downgradient of the FT-002 area. In general, the solvents TCE and DCE have been detected throughout the plume and are the only VOCs detected at the periphery of the plume. Elevated concentrations of chlorinated solvents in the southern portion of the plume could be attributable to an artificial conduit that diverts groundwater along the southern periphery of the plume (ABB/URS, 1993).




Source: ABB/URS, 1993.

**FIGURE 2.6a**

**AREAL EXTENT OF CHLORINATED SOLVENT CONTAMINATION**

EE/CA
Plattsburgh AFB, New York

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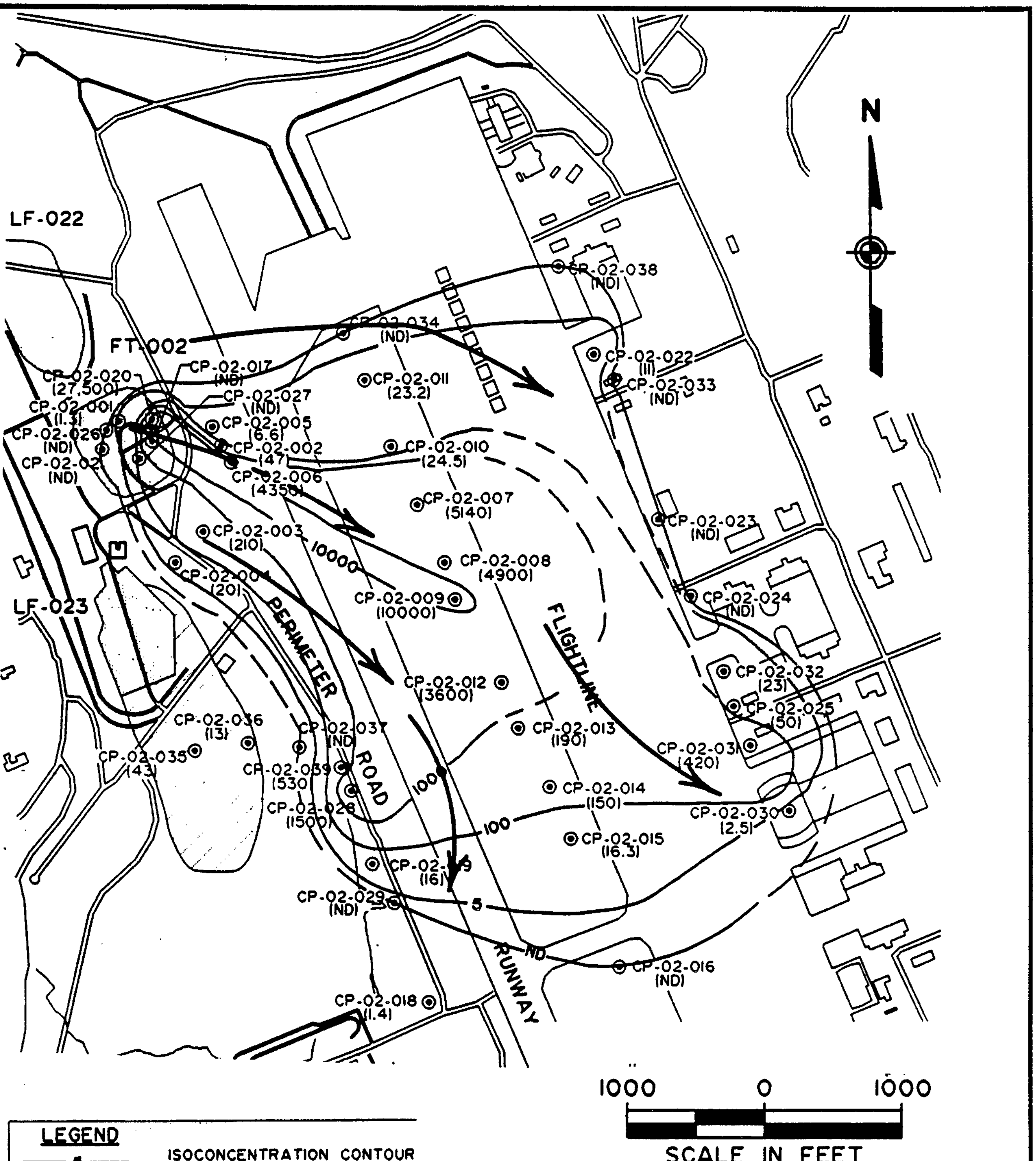



LEGEND

| | |
|---|---|
| — 5 — | ISOCONCENTRATION CONTOUR IN ppb FOR CHLORINATED SOLVENTS |
| (hatched box) | APPROXIMATE CONTAMINANT PLUME LF-023(FS) |
| ◉ CP-02-001 | PCPT BORING LOCATION |
| ——→ | GENERAL GROUNDWATER FLOW DIRECTION |
| (ND) | NON-DETECT |
| (1.4) | CHLORINATED SOLVENT CONCENTRATION(ppb) |

Source: ABB/URS, 1993.

**FIGURE 2.6b**

**AREAL EXTENT OF CHLORINATED SOLVENT CONTAMINATION**

EE/CA
Plattsburgh AFB, New York

**ENGINEERING-SCIENCE, INC.**
Denver, Colorado

The vertical extent of the chlorinated solvent plume is greatly affected by the hydrogeology in the FT-002 area (Figure 2.7). The core of the chlorinated plume is located near the midpoint of the saturated zone within the upper, unconfined aquifer (about 20 feet below the local groundwater table). The vertical migration of the chlorinated solvents from the source area appear to have been limited by the underlying clay layer. Away from the source area, however, the chlorinated solvent plume spreads vertically as well as laterally in the direction of groundwater flow (southeast). Over time, the contaminants appear to have migrated farther laterally than vertically, although significant vertical migration has occurred immediately downgradient of the FT-002 source area to a depth of about 60 feet below the local groundwater table. The lateral spread may be due to the size and long operational life of the source area, the physical and chemical characteristics of the contaminants, and/or the close proximity of influencing rivers that can enhance peripheral spreading of the plume (USEPA, 1989).

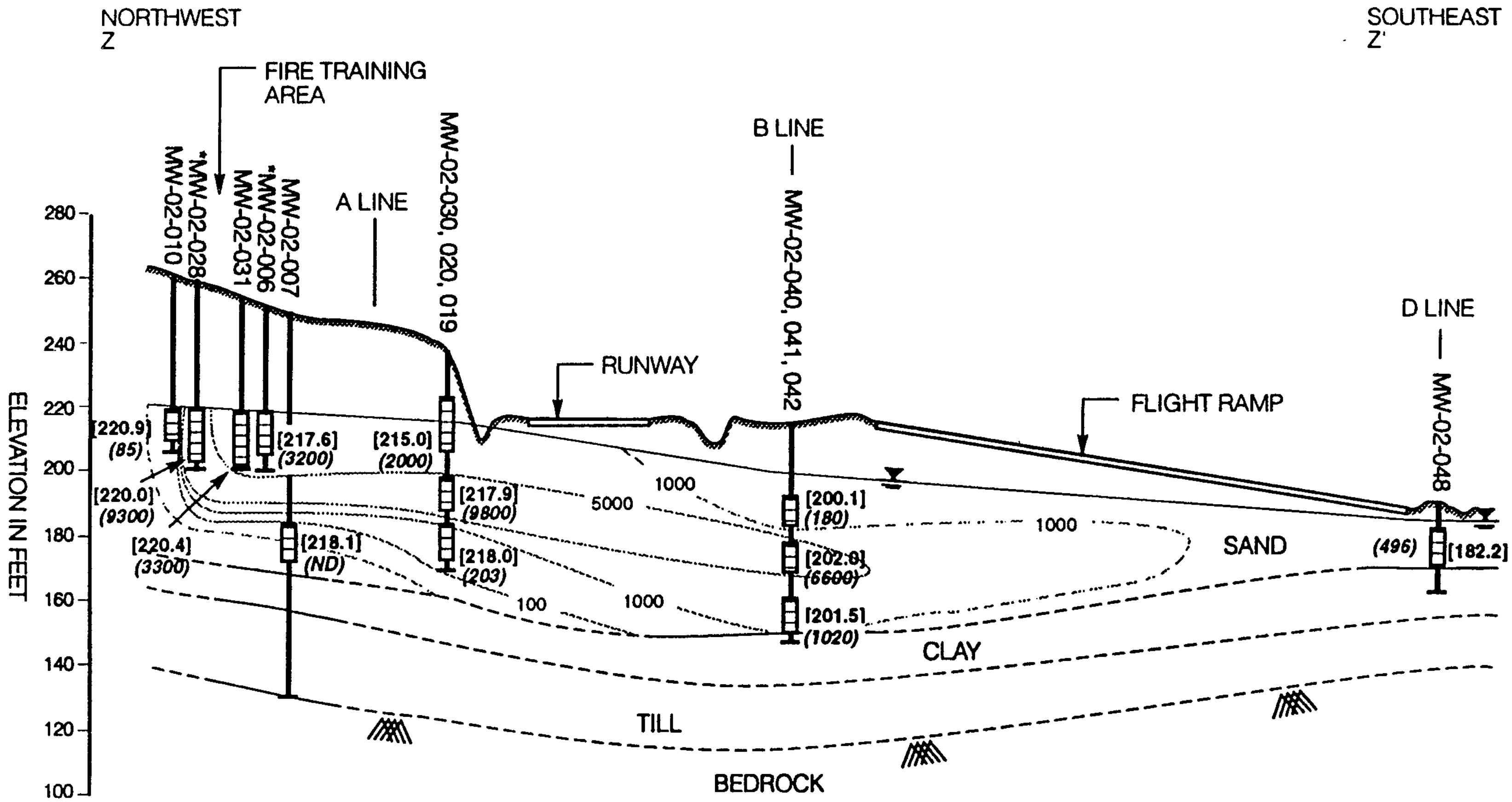
At most monitoring well locations, there also may be a significant component of upward groundwater vertical flow, which may also limit the vertical extent of the chlorinated solvent plume. It is difficult, however, to evaluate with certainty the effect on movement of the chlorinated solvent plume caused by vertical gradients because of other complicating effects which result from local density gradients and stratigraphic heterogeneities.

### 2.2.2 Extent of BTEX Plume

The horizontal extent of the BTEX plume is less than that of the chlorinated solvent plume (ABB/URS, 1993). BTEX compounds were detected primarily near the source area in FT-002 (Figures 2.8a and b). In 1991, the core plume of the BTEX compounds extended approximately 1,000 feet southeast from FT-002 beneath the runway, similar to the chlorinated solvent plume. The peripheral BTEX plume extended 3,500 feet essentially downgradient of the FT-002 source area. Near the FT-002 source area, the vertical extent of the BTEX plume appears similar to that of the chlorinated solvent plume (Figure 2.9). However, BTEX compounds are largely absent in groundwater samples taken away from the source area (e.g., 1,600 feet downgradient). As with the chlorinated solvent plume, the BTEX plume appears to have spread more laterally than vertically over time.

## 2.3 DEVELOPMENT OF THE CONCEPTUAL MODEL

The development of an adequate site-specific conceptual model is a critical path to determining whether the intrinsic remediation option is a viable remedial alternative for the FT-002 site. A site-specific conceptual model is a three-dimensional representation of the hydrogeologic system at the site based on available geological, hydrological, climatological, and geochemical data. Detailed information on the transport and fate of contaminants of concern in the groundwater system is also necessary to develop an integrated conceptual model that accounts for groundwater flow and contaminant migration. The conceptual model is used to aid in identifying any data gaps that must be filled to support the EE/CA and to help develop the site-specific parameters used in the Bioplume II® model.




**LEGEND**

*MW - 02 - 007*

GROUNDWATER LEVEL (9/91 - 11/91)

[202.5] GROUNDWATER ELEVATION

EXISTING MONITORING WELL

BOREHOLE TERMINATION

100 GROUNDWATER CONTAMINANTS CONCENTRATION CONTOUR

*(2330)* CHLORINATED SOLVENT CONCENTRATION

*(ND)* NON-DETECT

Notes: 1) * - Indicates 1989 data; well not sampled in 1991.

2) Bedrock surface inferred from seismic results (Appendix B).

SCALE IN FEET

0 800 1600

VERTICAL EXAGGERATION 20:1

**Source: ABB/URS, 1993.**

**FIGURE 2.7**

**VERTICAL EXTENT OF CHLORINATED SOLVENT CONTAMINATION**

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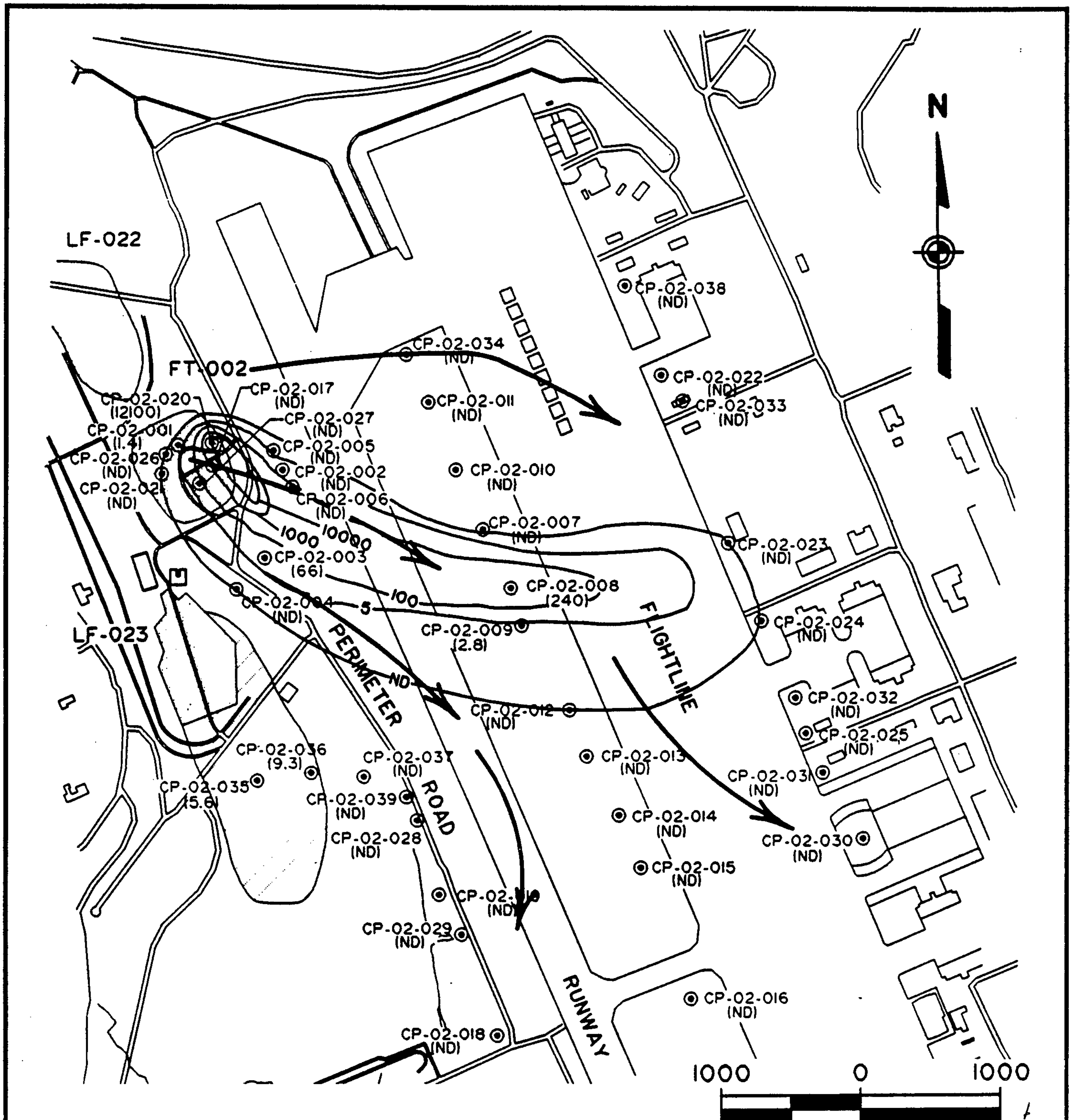
**ENGINEERING-SCIENCE, INC.**

Denver, Colorado




**LEGEND**

| | |
|---|---|
| —— 5 —— | ISOCONCENTRATION CONTOUR IN (ppb) FOR BTEX COMPOUNDS |
| | APPROXIMATE CONTAMINANT PLUME LF-023(FS) |
| ⟶ | GENERAL GROUNDWATER FLOW DIRECTION |
| ◉ CP-02-001 | PCPT BORING LOCATION |
| (ND) | NON DETECT |
| (1.4) | BTEX CONCENTRATION(ppb) |

Source: ABB/URS, 1993.

**FIGURE 2.8a**

**AREAL EXTENT OF BTEX CONTAMINATION**

EE/CA
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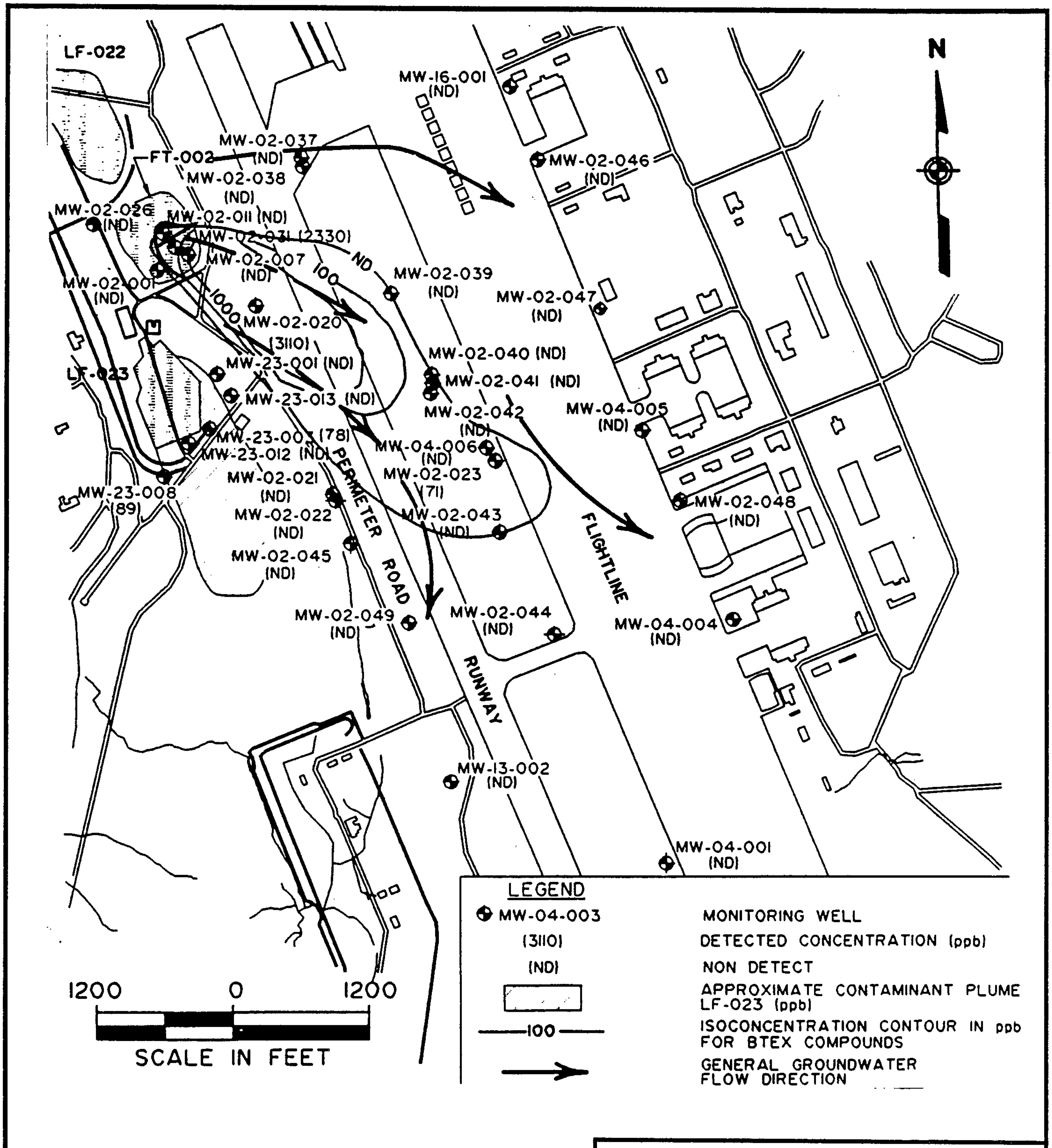
Denver, Colorado




Source: ABB/URS, 1993.

**FIGURE 2.8b**

**AREAL EXTENT OF BTEX CONTAMINATION**

EE/CA
Plattsburgh AFB, New York

**ENGINEERING-SCIENCE, INC.**
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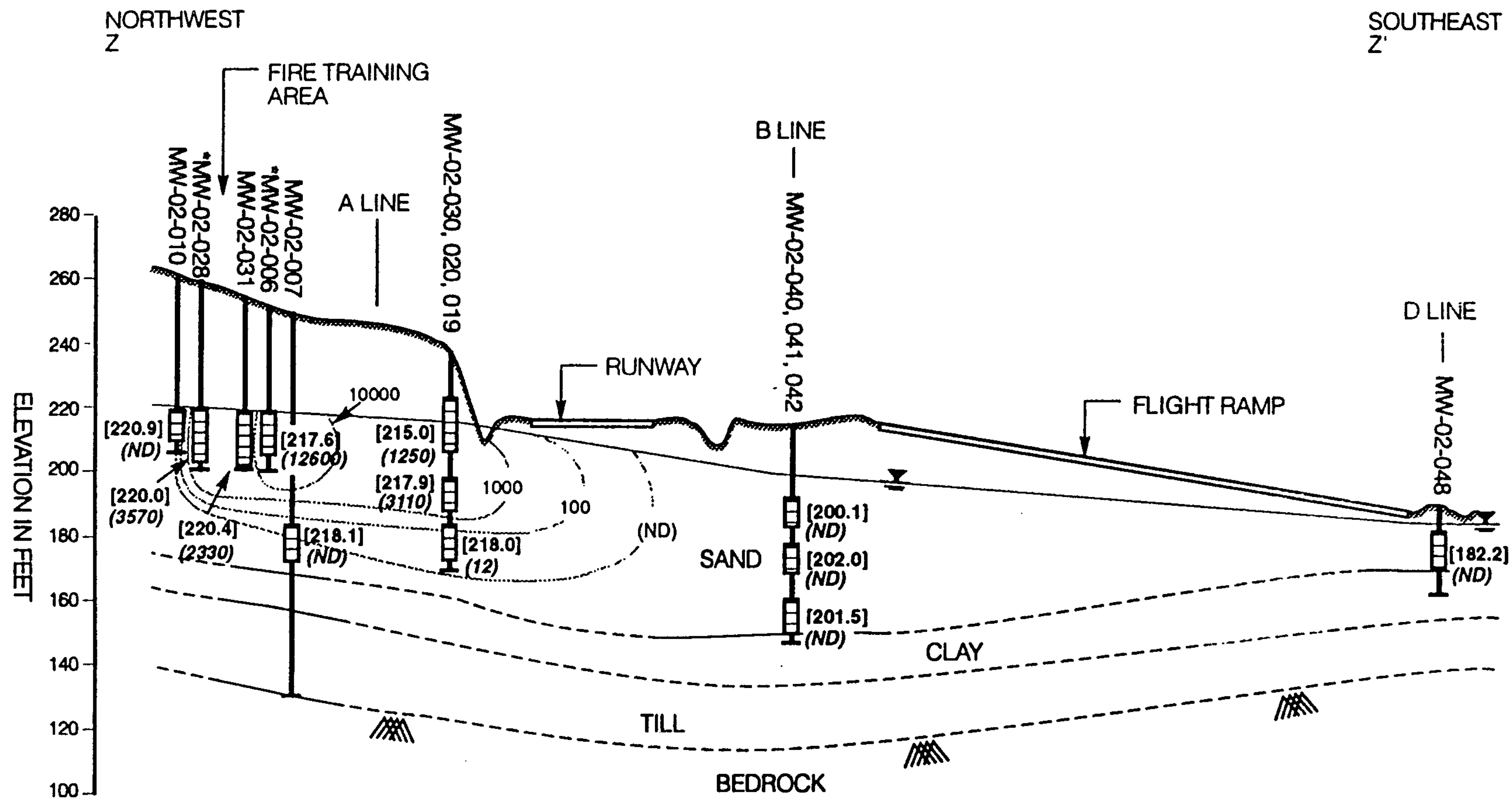



**LEGEND**

*MW - 02 - 007*

GROUNDWATER LEVEL (9/91 - 11/91)

[202.5] GROUNDWATER ELEVATION

EXISTING MONITORING WELL

BOREHOLE TERMINATION

100 GROUNDWATER CONTAMINANTS CONCENTRATION CONTOUR

*(2330)* BTEX CONCENTRATION (ppb)

*(ND)* NON-DETECT

Notes: 1) * - Indicates 1989 data; well not sampled in 1991.

2) Bedrock surface inferred from seismic results (Appendix B).

SCALE IN FEET

0 800 1600

VERTICAL EXAGGERATION 20:1

**FIGURE 2.9**

**VERTICAL EXTENT OF BTEX CONTAMINATION**

EE/CA
Plattsburgh AFB, New York

**ENGINEERING-SCIENCE, INC.**
Denver, Colorado

**Source: ABB/URS, 1993.**

Development of a successful conceptual model requires completion of four critical steps: (1) defining the problem to be solved; (2) integrating available site-specific and contaminant-specific data; (3) selecting an appropriate model for the specific site conditions; and (4) identifying any additional data needs. Site and contaminant-specific data are necessary to examine the behavior of the contaminants within model simulations and to determine potentially relevant transport and exposure pathways for the contaminants of concern.

### 2.3.1 Problem Definition

As discussed previously, the purpose of this study is to determine if the intrinsic remediation option is the most appropriate remedial alternative for the groundwater contamination present at site FT-002 or if a more active remedial alternative is necessary. Two separate classes of contaminants of concern have been identified in the soil and groundwater underlying the FT-002 site: chlorinated solvents and fuel-related BTEX compounds. Thus, the proposed study will seek to determine the transport and fate of both classes of contaminants by simulating contaminant behavior in the subsurface groundwater system under the governing physical and chemical regime. The study will explore, to the extent practicable, the possibility of co-metabolism of site-specific degradable organic contaminants.

### 2.3.2 Overview of Intrinsic Remediation

Numerous laboratory and field studies have shown that subsurface microorganisms can degrade a variety of hydrocarbons, including components of jet fuel and gasoline (e.g., Lee, 1988; Atlas, 1988; Young, 1984; Alvarez and Vogel, 1991; Jamison et al., 1975; Malone et al., 1993). The moderate- to low-molecular-weight compounds, such as the BTEX compounds, appear to be most amenable to biodegradation. The process of biodegradation of fuel hydrocarbons occurs naturally when an indigenous (and properly acclimated) population of hydrocarbon-degrading microorganisms is present in the aquifer and sufficient oxygen and nutrients are available to these microorganisms.

The rate of natural biodegradation is generally limited by a lack of oxygen rather than by a lack of nutrients, such as natural nitrogen or phosphorus (Borden and Bedient, 1986). Thus, the rate of natural aerobic biodegradation in shallow aquifers is largely dependent upon the rate at which oxygen enters the contaminant plume. Aquifers in sandy soils (such as those underlying the FT-002 site), which provide high transmissivity and vertical reaeration, are excellent candidates for the occurrence of natural biodegradation.

A significant reduction in dissolved oxygen within an existing BTEX plume is a strong indication that indigenous bacteria are actively biodegrading fuel contamination. This inverse relationship is indicative of natural aerobic biodegradation because microorganisms consume oxygen when mineralizing BTEX compounds to carbon dioxide and water. These microorganisms use oxygen as a cosubstrate during the initial stages of hydrocarbon metabolism, and as a terminal electron acceptor for energy production during the later stages (Higgins and Gilbert, 1978; Gibson and Subramanian, 1984; Young, 1984). Contaminant-specific calculations based on the stoichiometry of the mineralization reaction yield the amount of oxygen necessary to support the degradation of the contaminant of concern. A conservative estimate of the amount of dissolved oxygen necessary to convert total BTEX to carbon dioxide is 3.1 pounds of oxygen per 1 pound of BTEX.

The presence of additional organic degradable compounds may also enhance the degradation of hydrocarbons and/or chlorinated solvents through co-metabolism (Howard, 1990). Co-metabolism has been defined as the biotransformation of one substance not normally used to meet metabolic needs in the presence of another biotransformable substance that can be used to meet metabolic needs. Thus, BTEX compounds could act as the primary substrates that can be used to meet the growth demands of the indigenous microorganisms, although the chlorinated solvents may be fortuitously biotransformed. This secondary biotransformation may be attributable to an increased demand for an additional source of energy and biosynthesis material for bacterial maintenance and growth. Additionally, the need to supplement the specific primary substrate may activate enzymes necessary for the biotransformation of the secondary substrate.

Many recalcitrant organic compounds, such as chlorinated solvents, may be degraded in the presence of more highly concentrated, different compounds that are used to meet the growth and energy requirements of the local biomass (e.g., BTEX compounds). This form of co-metabolism is called secondary utilization, since the recalcitrant compounds become secondary substrates and may or may not provide some energy for growth (McCarty et al., 1981). It is important to note that a secondary substrate does not have to share the same enzymatic pathways as the primary substrate, but the indigenous microorganisms must be capable of biotransforming both compounds.

Specific primary substrates may also be needed to activate the enzymes necessary for biotransformation of recalcitrant organic pollutants. Thus, the enzymes produced by the local biomass to metabolize the primary substrate can interact with the recalcitrant secondary substrate and bring about its biotransformation. Sufficient primary substrate must be available in the system to maintain the biotransforming enzymes in an active state. However, if the primary substrate is present in excessive concentrations, then preferential utilization of the primary substrate may repress utilization of the secondary substrate. This study will explore (to the extent practicable) the potential for co-metabolism under the site-specific groundwater conditions at the FT-002 site.

### 2.3.3 Selection of Model Code

To accomplish the stated purpose of this study, a simulation model must be capable of computing changes in contaminant concentration caused by at least four distinct processes: (1) advective transport, (2) hydrodynamic dispersion, (3) fluid sources (e.g., injection wells, drainageways, receiving surface streams), and (4) reactions (e.g., adsorption, biodegradation, abiotic degradation).

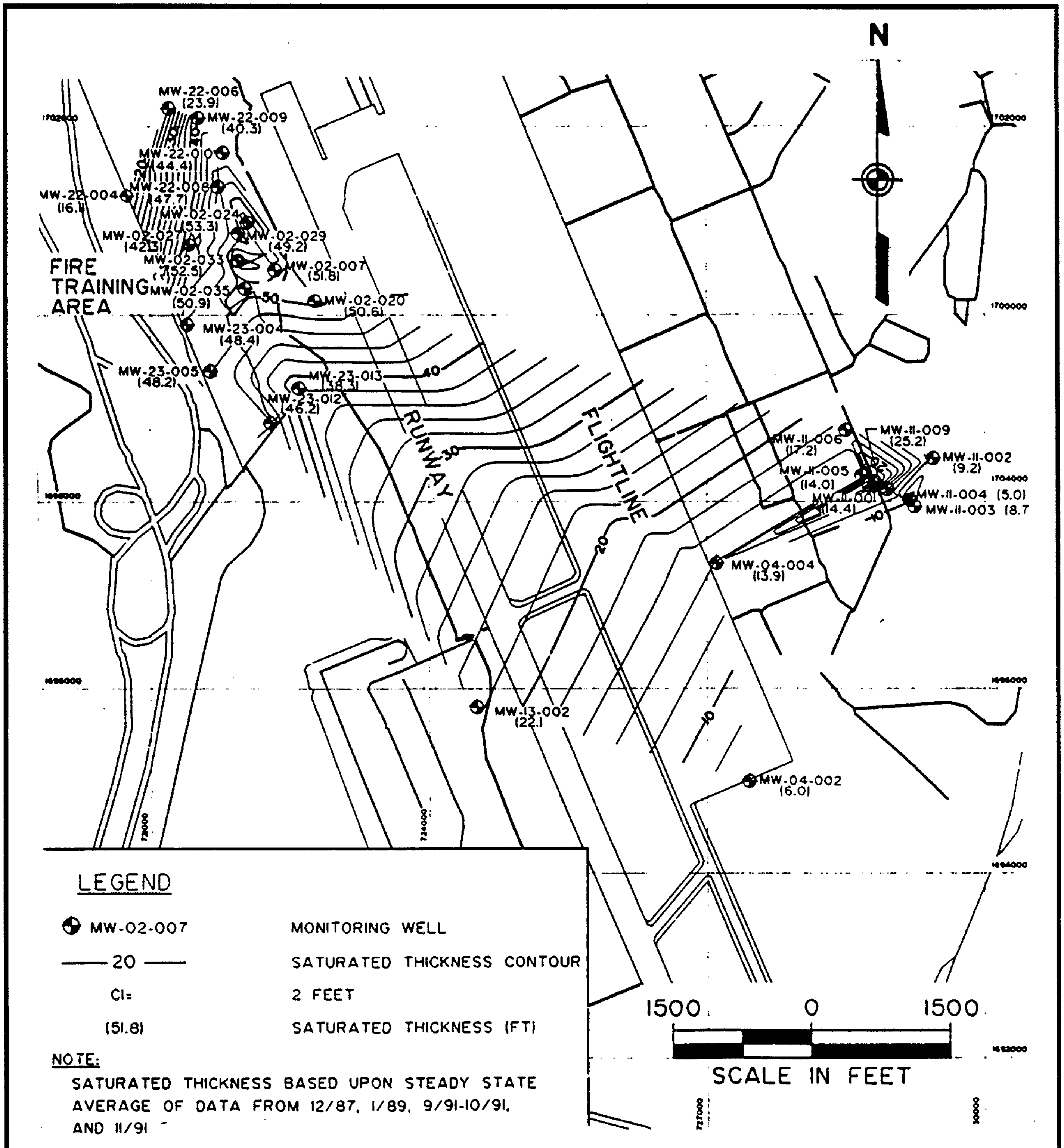
The Bioplume II® model is based upon the U.S. Geological Survey (USGS) two-dimensional (2-D) solute transport model modified to include a biodegradation component that is activated by a superimposed plume of dissolved oxygen (Rifai et al., 1988). Bioplume II® solves the USGS 2-D solute transport equation twice, once for hydrocarbon concentrations in the aquifer and once for a dissolved oxygen plume. The two plumes are then combined using superposition at every particle move to simulate the biological reaction between hydrocarbons and oxygen. The Bioplume II® model calculates changes in contaminant concentration due to biodegradation reactions by assuming an instantaneous reaction between the contaminant and dissolved oxygen. The instantaneous reaction decreases the concentration of the contaminant by an amount proportional to the available dissolved oxygen in the aquifer. The model calculation is based upon modified Monod kinetics to simulate the degradation of hydrocarbon compounds and assumes that the hydrocarbons are directly mineralized to carbon dioxide and water. Because the model does not account for increased degradation due to the production of cell mass and intermediate reaction products, the extent of biodegradation is underestimated (e.g., see Malone et al., 1993). Thus, the Bioplume II® model presents a very conservative estimate of the amount of biodegradation occurring in the subsurface. Actual biodegradation rates will be higher than predicted by the model, and transport distances will be overestimated.

### 2.3.4 Governing Physical Parameters

Groundwater flow for the FT-002 site was modeled using the USGS MODFLOW model as part of the phase II groundwater remedial investigation (ABB/URS, 1993). The modeled area covered about 6,200 acres and was bounded by the Saranac River, Lake Champlain, and other artificial, institutional boundaries. Although this model was shown to adequately simulate groundwater flow, the MODFLOW model must be coupled with a solute transport model to simulate contaminant transport and fate. A preliminary modeling effort using a solute transport code was completed for the draft groundwater operable unit feasibility study report (URS, 1993). This modeling effort only considered the potential effects of natural attenuation by analytically estimating dispersivities, groundwater seepage velocity, and a degradation constant for a target compound (i.e., 1,2-DCE). The purpose of the modeling activities proposed herein is to investigate the potential for natural attenuation of contaminants of concern within the subsurface environment at the FT-002 site using historical field data and additional data to be collected during this investigation. Intrinsic remediation hinges on the ability of the aquifer to retard migration of and/or eliminate contaminants of concern prior to completion of any receptor exposure pathway.

The governing physical parameters that will be incorporated into the Bioplume II® model will be based on existing site-specific stratigraphic and hydrogeological information. Based on available data, ES will model the FT-002 site as an unconfined sand and silty sand aquifer. Given the vertical extent of the chlorinated solvent and BTEX plumes and the lack of hydrologic connection to the lower aquifer units at the site, ES will only model the upper, unconfined aquifer. This approach is consistent with available data and the groundwater models described above.

The thin core contaminant plume suggests a fairly uniform sand aquifer with a low dispersivity and limited sorbing capacity. As demonstrated by site data (Tables 2.1 and 2.2), no noticeable trend exists in hydraulic conductivity as a function of depth. Thus, ES will model the upper, unconfined aquifer as a single layer accounting for variations in the hydraulic conductivity and thickness of the upper, unconfined aquifer within each grid cell to the extent practicable (Figure 2.10). An effective porosity of 0.35 will be used for the model, which is consistent with available data and the phase II remedial investigation results (ABB/URS, 1993).




Source: ABB/URS, 1993.

**FIGURE 2.10**

**UNCONFINED (SHALLOW) AQUIFER SATURATED THICKNESS ISOPACH MAP**

EE/CA
Plattsburgh AFB, New York

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Denver, Colorado

The phase II remedial investigation MODFLOW model divided the FT-002 site into cell sizes ranging from 100x100 feet to 100x200 feet. The Bioplume II® model requires a constant cell size. ES recommends the use of cell sizes equal to or less than 180x230 feet to cover the areal extent of the total plume yet provide adequate resolution of the groundwater flow system at the site.

ES has used available site-specific hydrogeologic data and representative hydrogeologic cross-sections at the FT-002 site which show the two- and three-dimensional relationships between hydrostratigraphic units (i.e., conductive units and aquitards), surface water bodies, and groundwater divides at the site. These cross-sections also integrate groundwater potentiometric data to show the position of the potentiometric surface relative to lithostratigraphic units to allow definition of the groundwater flow system and identification of preferential contaminant transport pathways. Figure 2.11 depicts the location of two hydrogeologic cross sections. Figure 2.12 represents a northwest-southeast hydrogeologic cross section of the FT-002 site which is oriented roughly parallel to the direction of groundwater flow. This section shows that the depth of the saturated zone increases from the northwest to southeast across the site. Figure 2.13 represents a north-south hydrogeologic cross section of the FT-002 site which is oriented roughly perpendicular to the direction of groundwater flow. Figure 2.2 shows groundwater potentiometric information potentially suitable for use in the proposed modeling efforts.

Based on the size of both the chlorinated solvent and BTEX plumes and the potential migration distance, a 20- by 30-cell model grid will be used. Each grid cell will have dimensions of 180 feet by 230 feet, based on existing site data. Figure 2.14 shows the proposed grid overlaid on the site map. The sizes of grid cells can be increased if preliminary runs of the Bioplume II® model indicate that the compounds of interest have the potential to migrate to and/or beyond model boundaries. Conversely, grid size can be reduced if greater resolution is desired and contaminant transport conditions allow.

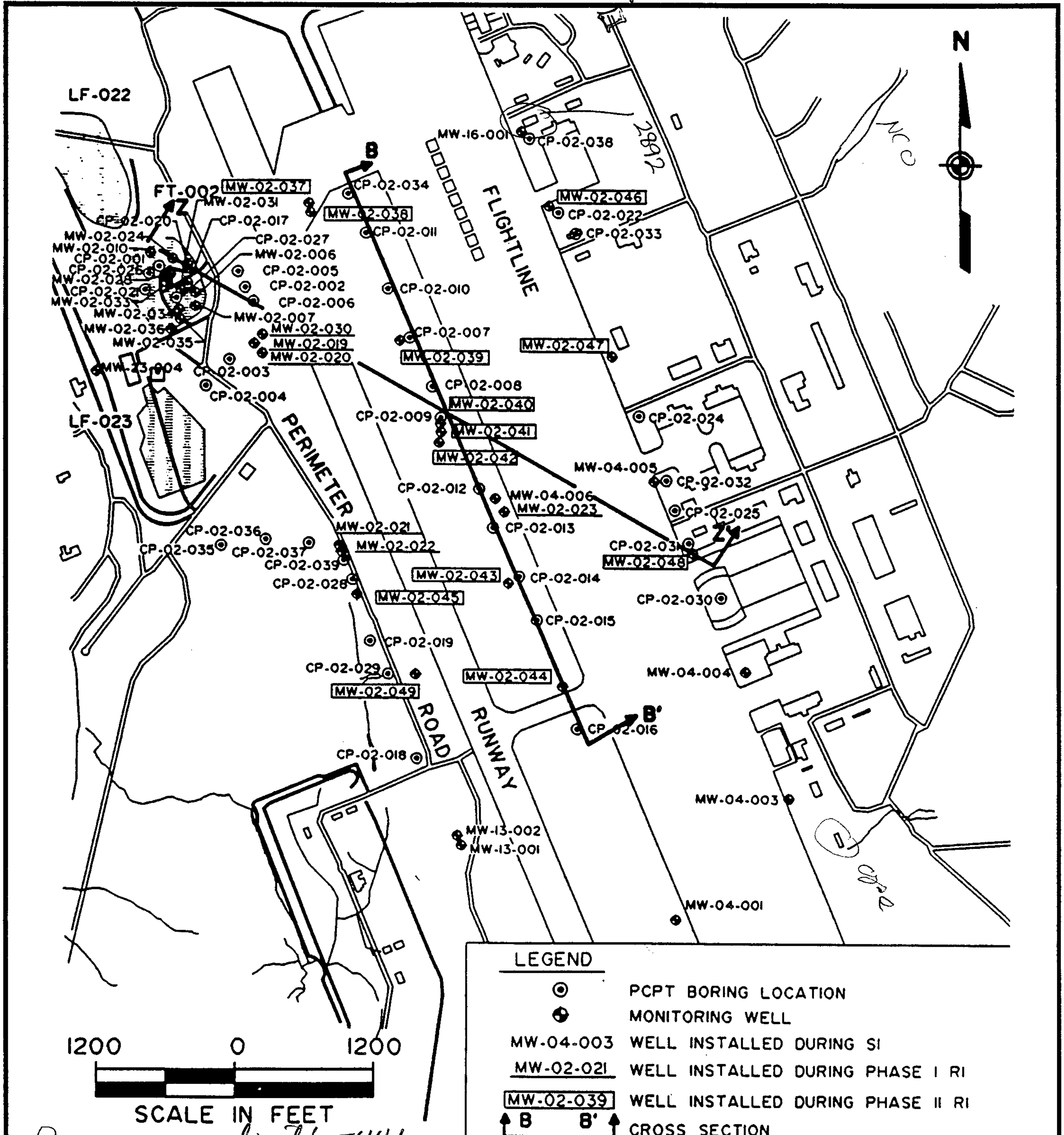
A summary site-specific conceptual model is schematically represented in Figure 2.15. This conceptual model may be modified as additional site hydrogeologic and other site-specific data become available.

### 2.3.5 Governing Chemical Concerns

The primary contaminants of concern in the groundwater are the chlorinated solvent TCE and its degradation products cis- and trans-1,2-DCE; the volatile aromatic BTEX fuel components; fuel-related SVOCs naphthalene and 2-methylnapthalene; and nonchlorinated phenols. The secondary contaminants of concern include volatile chlorinated solvents (e.g., chloromethane, vinyl chloride, dichloroethane, etc.), ketones, chlorinated phenols, other industrial solvents, and inorganics. Detailed groundwater data on these contaminants are presented in Appendix B.

During installation and initial sampling of several groundwater monitoring wells, it was noted that the majority of TCE/DCE contamination was detected in free floating product or in soil near the groundwater table. The presence of DCE in the free product can be attributed to both onsite activities and/or the degradation of TCE. The presence of floating product and heavy soil contamination in the capillary fringe suggests that

North Gate




Base Ops.

dispatch 5441

- MSGI Malcolm 5950

- need radio within 100 ft

- Markers are 75' from mum way

Sgt Campolongo 5441

Source: ABB/URS, 1993.

**FIGURE 2.11**

**HYDROGEOLOGIC CROSS SECTIONS OF FT-002**

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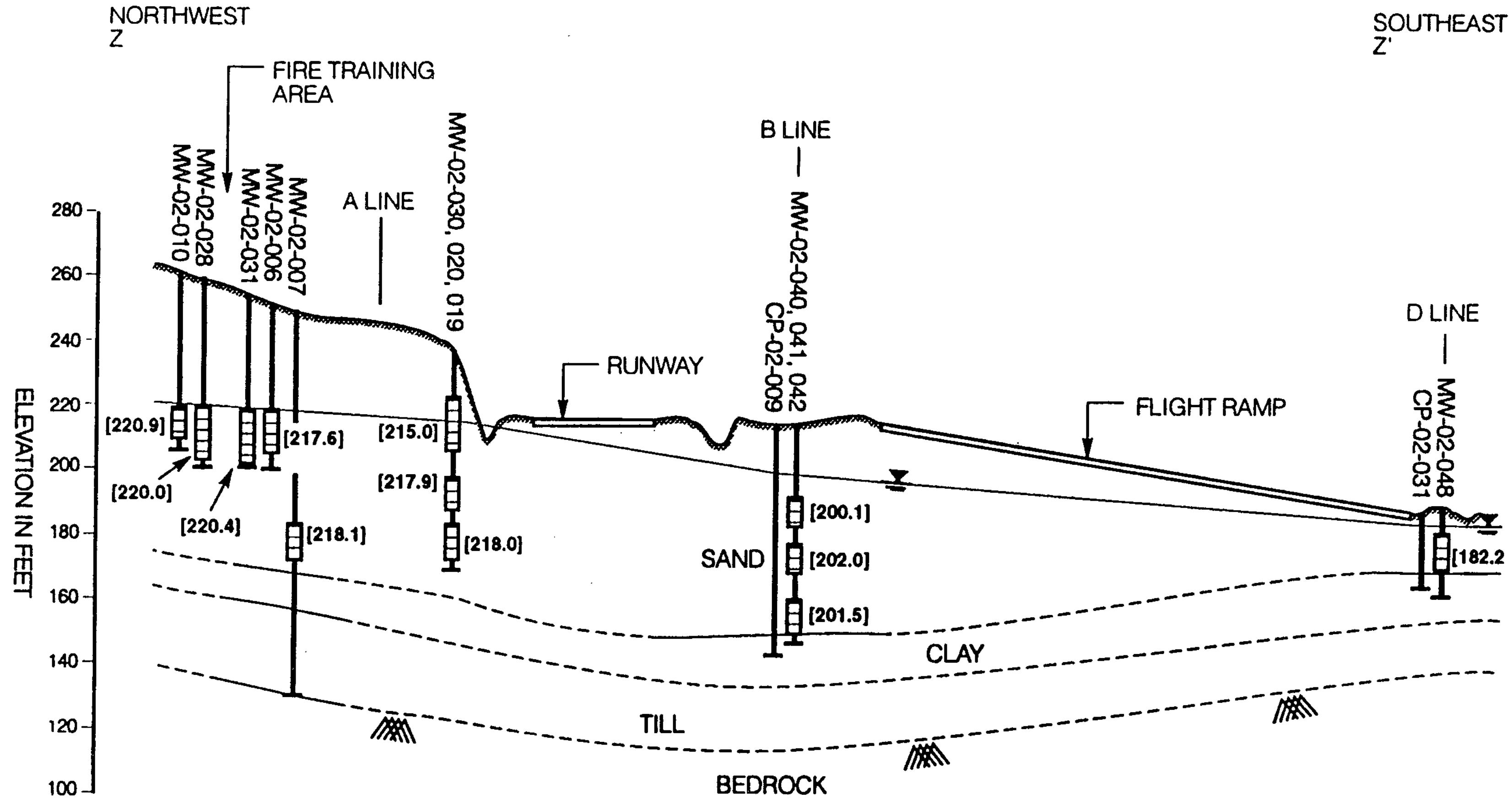


Notes: 1) Bedrock surface inferred from seismic results (Appendix B).

2) Groundwater level represents the hydraulic potential within the screen interval of the respective monitors. The water table surface reflects the potential measured in the shallower well at pair locations.

SCALE IN FEET

0 800 1600

VERTICAL EXAGGERATION 20:1

**LEGEND**

*MW - 02 - 007*

GROUNDWATER LEVEL (9/91 - 11/91)

[202.5] GROUNDWATER ELEVATION

EXISTING MONITORING WELL

BOREHOLE TERMINATION

**FIGURE 2.12**

**NORTHWEST-SOUTHEAST HYDROGEOLOGIC PROFILE**

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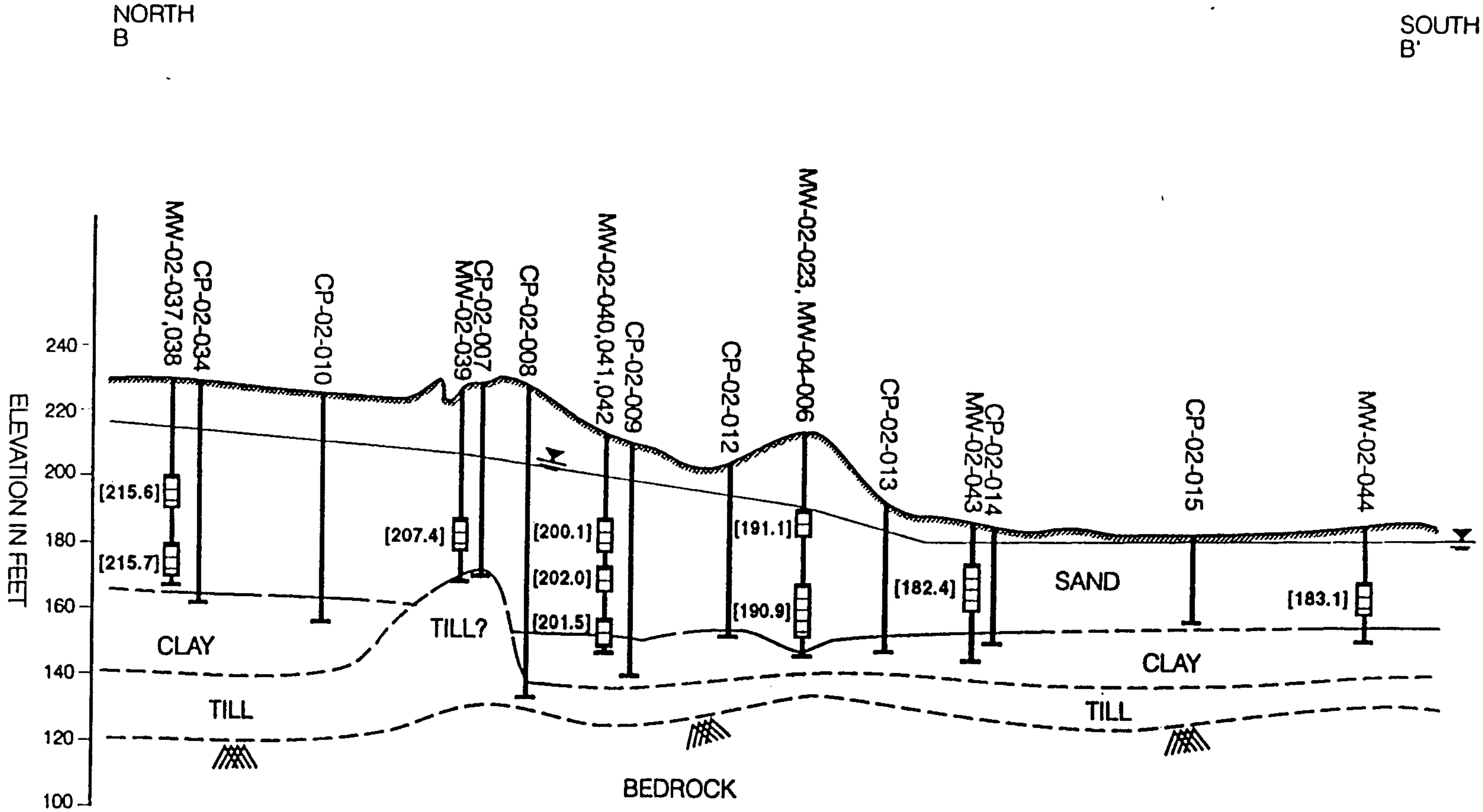
Denver, Colorado

**Source: ABB/URS, 1993.**




Notes: 1) Bedrock surface inferred from seismic results (Appendix B).

2) Groundwater level represents the hydraulic potential within the screen interval of the respective monitors. The water table surface reflects the potential measured in the shallower well at pair locations.

SCALE IN FEET

0 800 1600

VERTICAL EXAGGERATION 20:1

**LEGEND**

*MW - 02 - 007*

GROUNDWATER LEVEL (9/91 - 11/91)

[218.1] GROUNDWATER ELEVATION

EXISTING MONITORING WELL

BOREHOLE TERMINATION

**FIGURE 2.13**

**NORTH-SOUTH HYDROGEOLOGIC PROFILE**

EE/CA
Plattsburgh AFB, New York

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**Denver, Colorado**

**Source: ABB/URS, 1993.**

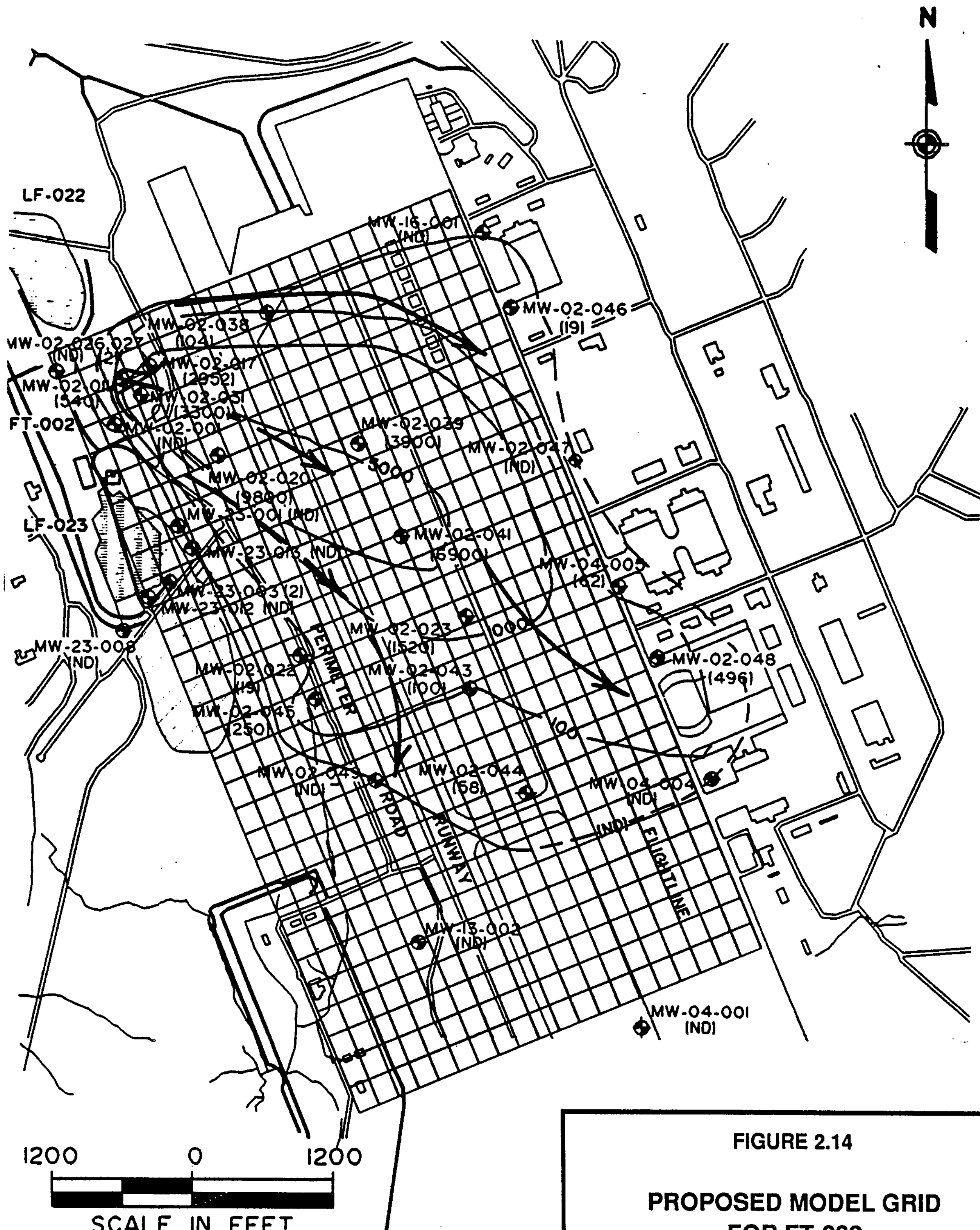


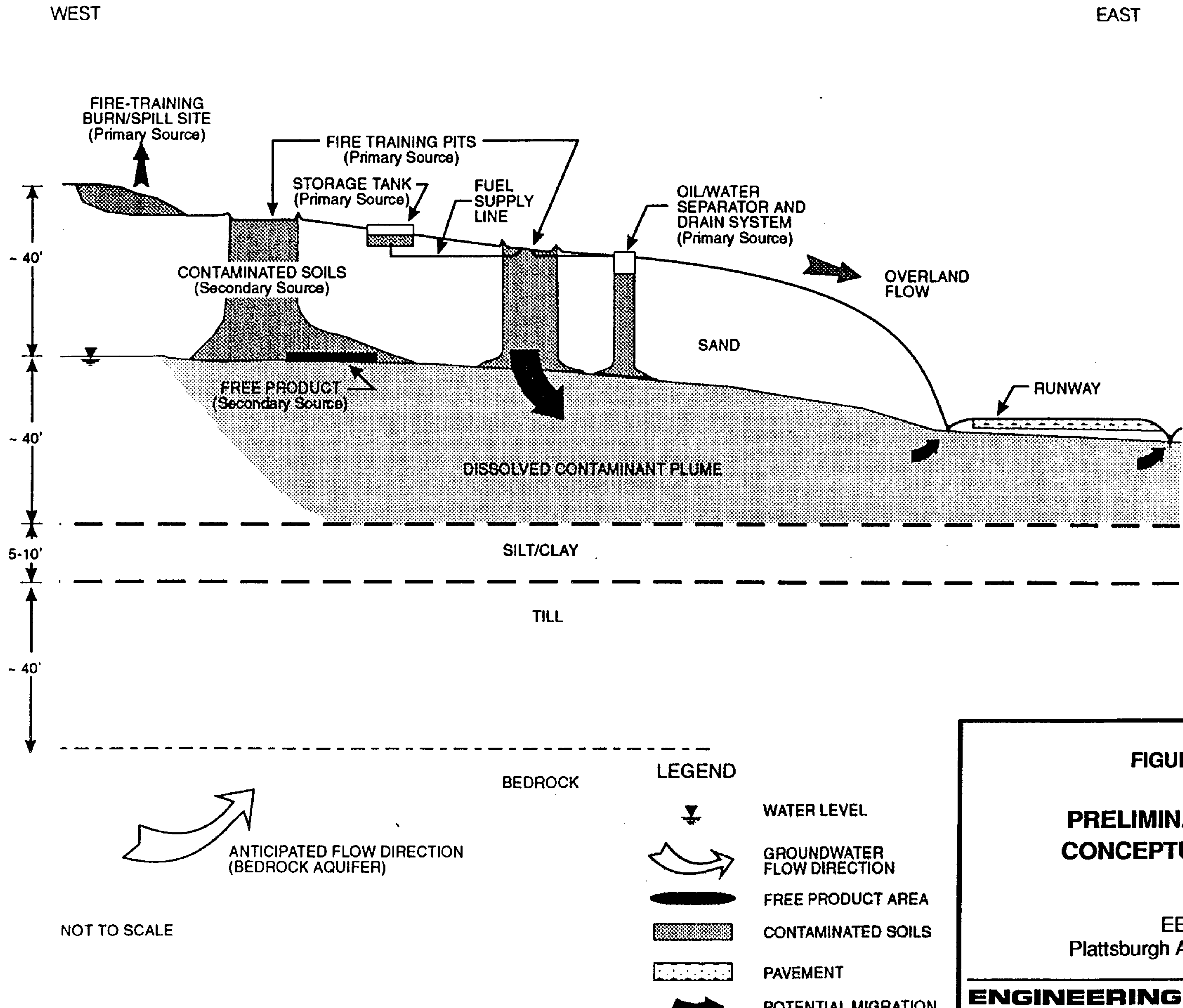

**FIGURE 2.14**

**PROPOSED MODEL GRID FOR FT-002**

EE/CA
Plattsburgh AFB, New York

**ENGINEERING-SCIENCE, INC.**
Denver, Colorado

**Source: ABB/URS, 1993.**




Source: ABB/URS, 1993.

**FIGURE 2.15**

**PRELIMINARY FT-002 CONCEPTUAL MODEL**

EE/CA
Plattsburgh AFB, New York

**ENGINEERING-SCIENCE, INC.**
Denver, Colorado

oxygen transfer may be severely limited in the source area and that aerobic biological activity may not be occurring. However, installation and operation of the free product recovery and bioventing systems, which should be completed shortly, may enhance contaminant degradation via co-metabolic, aerobic biological processes. The degradation of TCE/DCE may be initiated or enhanced where there are higher concentrations of other degradable organic compounds (Howard, 1990). Site data suggest that biodegradation of TCE/DCE may be occurring both at the source and downgradient of the source where there are high concentrations of other degradable organic compounds. One of the goals of this study is to explore the possibility of co-metabolism of chlorinated solvents and BTEX compounds in subsurface groundwater systems.

Migration of the TCE/DCE-containing free product is likely inhibited by the aquifer matrix. However, these contaminants could be more mobile than anticipated if they are partitioning from the free product into the groundwater. Because free product is present at the site, it may be necessary to use a contaminant/water partitioning model such as that developed by Bruce et al. (1991) to provide a conservative source term to model the partitioning of the individual or indicator chlorinated solvent compound(s) from the free-product phase into the groundwater. In order to use this model, samples of free product must be collected and analyzed for mass fraction of chlorinated solvent compounds. DCE is expected to be transported more quickly than TCE because of its greater water solubility. DCE has been detected at higher concentrations downgradient of the source area, which supports the possibility of contaminant dissolution and biodegradation.

The adsorption of the chlorinated solvent compounds of interest can be estimated using site-specific data to calculate an expected migration retardation coefficient. The degree of retardation of the chlorinated solvent plume will be calculated using the mass fraction of total organic carbon in the aquifer matrix and the octanol/water partitioning coefficient normalized for organic carbon of either the individual or selected indicator chlorinated solvent compound(s). This information will be incorporated into the model to simulate the behavior of the chlorinated solvents in a sandy aquifer.

The biodegradation of the fuel-related compounds of interest (BTEX) also appears to be inhibited within the FT-002 area. The degradation of BTEX compounds is inhibited by the surrounding anaerobic environment. Once these contaminants migrate away from the FT-002 source area and are exposed to more dissolved oxyen, biodegradation is likely occurring at a more rapid rate. This scenario is supported by existing site data, which show lower concentrations of these compounds in the peripheral plume. Chemical-specific calculations on the amount of dissolved oxygen necessary to mineralize a contaminant of interest will be developed using site-specific data and/or literature-derived information.

The migration of free product containing BTEX compounds is also likely inhibited by the aquifer materials. Again, these contaminants could be more mobile than anticipated if they are partitioning from the free product into the groundwater. Application of a fuel/water partitioning model such as that developed by Bruce et al. (1991) may be required to provide a conservative source term to model the partitioning of the BTEX compounds from the free-product phase into the groundwater. In order to use this model, samples of free product must be collected and analyzed for mass fraction of BTEX compounds.

The adsorption of the various BTEX compounds may also be incorporated into the model through a retardation coefficient based on site-specific and literature-derived information. The adsorption of BTEX compounds to aquifer materials may serve to enhance potential biodegradation by allowing increased oxygen transfer through the sorbed plume over time.

### 2.3.6 Data Gaps

One of the most important parameters in defining potential biodegradation at a site is the concentration of dissolved oxygen in the aquifer. Because this information has not been previously reported, ES will conduct field sampling activities to define this parameter. Additionally, contaminant-specific isopleth maps have not been identified. ES will develop these maps using existing data; supplemental field measurements will be necessary to support the development of complete isopleth maps in support of the intrinsic remediation option evaluation activities. This information will be transferred to model grid cells by overlaying the isopleth map on the model grid. Available information on anaerobic decay for each of the contaminants may also be identified and incorporated into the model code.

### 2.3.7 Potential Exposure Pathways and Receptors

Potential preferential contaminant migration pathways such as surface discharge points and subsurface utility corridors (artificial conduits) will be identified during the field work phase of this project. Such information can be obtained from Plattsburgh AFB maps which delineate areas that may facilitate rapid subsurface transport and/or surface discharge. Pathways to potential receptors may include discharge of contaminated groundwater into downgradient surface water bodies (e.g., drainageway and surface stream), and migration of the contaminant plume toward downgradient potable and nonpotable water wells.

Potential human and/or ecological receptors of chlorinated solvent and BTEX contaminated groundwater will be identified. Although no designated wetland or ecological sensitive habitat has been identified within or adjacent to FT-002, the immediate area will be surveyed briefly to identify any potential ecological receptors. In addition, a survey of groundwater wells located downgradient of the dissolved-phase plume will be conducted. Because of the hydrologic connection between the groundwater plume and receiving surface water bodies, it may be necessary to survey the area outside the immediate FT-002 site.

# SECTION 3

# COLLECTION OF ADDITIONAL DATA

To accurately complete the EE/CA and to demonstrate that natural attenuation of site-related contaminants is occurring at Site FT-002, additional site-specific hydrogeologic data will be collected. The physical and chemical hydrogeologic parameters listed below will be determined during the field work phase of the EE/CA.

Hydrogeologic characteristics to be determined include:

- Depth from measurement datum to the groundwater surface.
- Depth from measurement datum to the base of the shallow saturated zone (where feasible).
- Locations of potential groundwater recharge and discharge areas.
- Locations of downgradient wells and their uses.
- Hydraulic conductivity through slug tests, as required.
- Estimate of dispersivity, where possible.
- Stratigraphic analysis of subsurface media.
- Determination of extent and thickness of free-phase product.

Chemical hydrogeologic characteristics to be determined include:

- Dissolved oxygen concentration.
- Temperature.
- Specific conductance.
- pH.
- Chemical analysis of free product to determine mass fraction BTEX.
- Additional chemical analysis of groundwater and soil for the parameters listed in Table 3.1.

In order to obtain these data, cone penetrometer testing (CPT), groundwater and product sampling, soil gas sampling, and soil sampling will be completed at Site FT-002 in support of the EE/CA. The following sections describe the procedures that will be followed when collecting additional site-specific data. Laser-Induced-Fluorescence (LIF), cone penetrometer, and soil gas sampling methods are described in Section 3.1. Procedures to be used to sample existing groundwater monitoring wells and collect

**Table 3.1 Laboratory Analytical Protocol for Groundwater and Soil EE/CA Work Plan, Plattsburgh AFB**

| Matrix | Method | Volume Group | Field (F) or Analytical Laboratory (L) |
|---|---|---|---|
| <u>Water</u> | | | |
| Alkalinity (Carbonate [$CO_3^{2-}$] and Bicarbonate [$HCO_3^-$]) | E310.2 | 3 | L |
| Aromatic hydrocarbons | Gas chromatography - headspace SW8020-RSKERL-SOPL-122 | 2 | L |
| Carbon dioxide ($CO_2$) | Gas chromatography - headspace SW8020-RSKERL-SOPL-122 | -- | -- |
| Chloride | E300 or SW9056 | 3 | L |
| Chlorinated compounds | Gas chromatography - headspace SW8020-RSKERL-SOPL-122 | 2 | L |
| Conductivity | E.120.1/SW9050 | 3 | L |
| Ethane | Gas chromatography - headspace SW8020-RSKERL-SOPL-122 | 4 | L |
| Ethene | Gas chromatography - headspace SW8020-RSKERL-SOPL-122 | 4 | L |
| Ferrous Iron ($Fe^{2+}$) | Colorimetric | 1 | F |

A7-28-3

### Table 3.1 Laboratory Analytical Protocol for Groundwater and Soil EE/CA Work Plan, Plattsburgh AFB (continued)

| Matrix | Method | Volume Group | Field (F) or Analytical Laboratory (L) |
|---|---|---|---|
| Methane | Gas chromatography - headspace SW8020-RSKERL-SOPL-122 | 4 | L |
| Nitrate/nitrite | Colorimetric | 6 | L |
| Oxygen | HACH 16046 DO Meter | 5 | F |
| pH | E150.1/SW9040 | 5 | F |
| Sulfate | Colorimetric | 3 | L |
| Temperature | Direct reading meter | 5 | F |
| Total fuel carbon | SW8020 | 2 | L |
| Total organic carbon | SW8020 | 4 | L |
| Soil | | | |
| BTEX | RSKERL-SOPL-72 | | |
| Chlorinated volatile organics | | | |
| Moisture | Dry @105°C | | |
| Total petroleum hydrocarbons | Method 418.1 | | |

A7-28-3

**Table 3.1 Laboratory Analytical Protocol for Groundwater and Soil EE/CA Work Plan, Plattsburgh AFB (continued)**

| Matrix | Method | Volume Group | Field (F) or Analytical Laboratory (L) |
|---|---|---|---|
| <u>Soil Gas</u> | | | |
| Hydrocarbon vapor | Direct reading meters | | |
| Carbon dioxide | Direct reading meters | | |
| Methane | Direct reading meters | | |
| Oxygen | Direct reading meters | | |

Footnotes:

Volume Group

1 = 50 ml
2 = 80 ml
3 = 240 ml
4 = 120 ml
5 = 200 ml
6 = 120 ml
7 = 60 ml

A7-28-3

HydroPunch® samples are described in Section 3.2. Procedures to be used to collect soil core samples to verify LIF cone penetrometer and soil gas characterization data are described in Section 3.3.

## 3.1 CONE PENETROMETER AND SOIL GAS ANALYSIS

To further characterize the hydrogeologic conditions of the shallow subsurface at Site FT-002 for the intrinsic remediation demonstration, CPT will be completed. CPT will be conducted using the ARA penetrometer truck, which consists of an instrumented probe that is forced into the ground using a hydraulic load frame mounted on a heavy truck, with the weight of the truck providing the necessary reaction mass. The penetrometer equipment is mounted inside an 18-foot van body attached to a 10-wheel truck chassis with a turbo-charged diesel engine. Ballast in the form of metal weights and a steel water tank, which can hold 5,000 pounds of water, are added to the truck to achieve an overall push capability of 45,000 pounds. This push capacity may be limited in tight soils by the structural bending capacity of the 1.405-inch outside-diameter (OD) push rods, rather than by the weight of the truck. The current 45,000-pound limitation is intended to minimize the possibility of push-rod buckling. Penetration force is supplied by a pair of large hydraulic cylinders bolted to the truck frame.

The penetrometer probe is of standard dimensions, having a 1.405-inch-OD 60-degree conical tip, and a 1.405-inch-OD by 5.27-inch-long friction sleeve. Inside the probe, two load cells independently measure the vertical resistance against the conical tip and the side friction along the sleeve. Each load cell is a cylinder of uniform cross section inside the probe which is instrumented with four strain gauges in a full-bridge circuit. Forces are sensed by the load cells, and the data are transmitted from the probe assembly via a cable running through the push tubes. The analog data is digitized, recorded, and plotted by computer in the penetrometer truck.

The penetrometer is normally advanced vertically into the soil at a constant rate of 48 inches per minute, although this rate must sometimes be reduced, such as when hard layers are encountered. The focus of the cone penetrometer sampling at Site FT-002 is to delineate the free-phase and dissolved-phase BTEX plumes. The magnitude of the penetration pore pressure is a function of compressibility and, most importantly, permeability. Penetration, dissipation, and resistivity data will be used to determine potential site layering as it is encountered in the field.

A LIF CPT system will be employed to characterize the areal extent of the free-phase plume at Site FT-002. The LIF CPT probe is designed to measure tip and sleeve stress, pore pressure, and LIF simultaneously. The fiber optic cable connected to the laser spectrometer, and a 6-pair electrical conductor connected to the CPT data acquisition system, are routed through the interior of the push tubes to the CPT probe. Two load cells measure vertical resistance beneath the tip and frictional resistance on the side of the probe, respectively. The pressure gauge located above the cone tip monitors the pore water pressure.

The basic laser system components of the LIF CPT are a Nd:YAG® pump laser, two separate and independent dye lasers, frequency-doubling crystals to convert the visible dye laser output to ultraviolet, a fiber optic probe, a monochromator for wavelength resolution of the return fluorescence, a photomultiplier tube to convert photons into an electrical signal, a digital oscilloscope for waveform capture, and a control computer. The fiber optic probe for the cone penetrometer consists of a delivery and collection fiber, a protective sheath, a fiber optic mount within the cone, and a sapphire window. The up-hole portion of the system is adaptable to either groundwater monitoring fiber optic probes or an optical cone penetrometer probe. Optimal wavelengths to be used during a continuous CPT push will be determined from initial data. Wavelength is selected to give the strongest fluorescence signal, which can be attributed to the presence of contamination. Past experience suggests that a short wavelength of less than 275 nanometers (nm) may be appropriate for the fluorescence of BTEX.

In addition to LIF CPT data, soil gas sampling data will also be collected at 10-foot intervals at locations near each LIF CPT push. The following sections outline the overall sampling strategy to be completed in support of the intrinsic remediation EE/CA.

### 3.1.1 Sampling Strategy

LIF CPT data will be coupled with soil gas analysis to define the areal and vertical extent of the free-phase plume at Site FT-002. The cone penetrometer will be pushed from ground surface to approximately 10 feet below the groundwater level at any specific sample point. Soil gas samples will also be taken at 10-foot intervals, and will be analyzed for carbon dioxide, oxygen, total petroleum hydrocarbons (TPH), and methane. Feed lines for soil gas analyses will be attached directly to gas analytical instrumentation housed in the penetrometer truck.

It is anticipated that 12 to 16 LIF CPT points will be sampled to define the edges of the free-phase plume. The general area to be sampled was determined during the October 18 and 19, 1993 meetings at Plattsburgh AFB. Sample locations will be along the suspected plume centerline, in an iterative, forward and backward fashion to define the leading edge of the free-phase plume. Once the downgradient edge of the free-phase plume has been identified, additional cone penetrometer sample points will define the lateral edges. Initial cone penetrometer samples will be taken in the vicinity of previous CPT boring locations CP-02-020 and CP-02-027 (see Appendix B). Soil gas sample locations will be immediately adjacent to LIF CPT sample points.

### 3.1.2 CPT Hole Grouting Procedure

Cone penetrometer testing can create holes which may provide potential contamination pathways into groundwater supplies. To prevent any cross contamination, the test holes will be grouted to seal the hole and eliminate the contaminant migration pathway. The instrumented cone assembly and any other retrievable portion of the assembly will be completely removed from the penetration hole. Grout will be prepared using bentonite pellets.

All necessary digging permits will be obtained prior to mobilizing to the field. In addition, all utility lines will be located and proposed CPT locations cleared prior to any CPT pushing activities.

### 3.1.3 Decontamination Procedures

The CPT push rods will be cleaned with ARA's CPT steam-cleaning system (rod-cleaner) as the rods are withdrawn from the ground. A vacuum system has been developed, which results in nearly 100-percent recovery of steam-cleaning rinseate from the rod-cleaner located beneath the CPT truck. Rinseate is generated only as the rods move past the cleaner, thereby minimizing liquid waste generation. Care will be taken not to apply the pressurized steam to the LIF module. Rinseate does not have to be collected for disposal, per Plattsburgh AFB.

Potable water to be used in CPT equipment cleaning, decontamination, or grouting will be obtained from one of the base's onsite water supplies. Water use approval will be verified by contacting the appropriate facility personnel. Only potable water will be used for the activities listed above. The field hydrogeologist will make the final determination as to the suitability of site water for these activities. Precautions will be taken to minimize any impact to the surrounding area that might result from decontamination operations. Fuel, lubricants, and other similar substances will be handled in a manner consistent with accepted safety procedures and standard operating practices.

## 3.2 GROUNDWATER SAMPLING

This section describes the scope of work required for collecting groundwater quality samples at the existing groundwater monitoring wells and near existing LIF CPT locations using the HydroPunch® sampling apparatus. All water samples collected from groundwater monitoring wells will be obtained using dedicated, disposable bailers. In order to maintain a high degree of quality control during this sampling event, the procedures described in the following sections will be followed.

Groundwater sampling will be conducted by qualified scientists and technicians trained in the conduct of well sampling, records documentation, and chain-of-custody procedures. In addition, sampling personnel will have thoroughly reviewed this plan prior to sample acquisition and will have a copy of the plan available onsite for reference.

For this project, groundwater samples will be collected in two phases. Phase one will consist of collecting groundwater samples near LIF CPT locations using the HydroPunch®. This phase of the groundwater sampling process is described in Section 3.2.3.1 and will occur during December 3 and 6, 1993. The second phase of groundwater sampling is described in Section 3.2.3.2 and will occur during December 3 through 6, 1993.

Activities that will occur during groundwater sampling are summarized below:

- Assembly and preparation of equipment and supplies;
- Inspection of the well integrity (for monitoring well sampling), including
    - Protective cover, cap, and lock,
    - External surface seal and pad,
    - Well stick-up, cap, and datum reference,

- Internal surface seal, and
- Condition of bladder pump if present;

- Groundwater sampling, including
  - Water level measurements,
  - Visual inspection of borehole water,
  - Well casing evacuation, and
  - Sampling;
- Sample preservation and shipment, including
  - Sample preparation,
  - Onsite measurement of physical parameters, and
  - Sample labeling;
- Completion of sampling records;
- Completion of chain-of-custody records; and
- Sample disposition.

Detailed groundwater sampling and sample handling procedures are presented in following sections.

### 3.2.1 Groundwater Sampling Strategy

Groundwater samples will be collected from existing monitoring wells using a disposable bailer and near CPT locations using HydroPunch® groundwater sampling equipment.

#### 3.2.1.1 HydroPunch® Sampling

The HydroPunch II® sampling device is designed to be pushed or driven to the desired sample depth, either from the ground surface or from the bottom of a drilled borehole, similar to a split-barrel sampler. The HydroPunch® utilizes an air-tight and water-tight sealed intake screen and sample chamber, which is isolated from the surrounding environment as the tool is advanced. The surface of the HydroPunch® is designed to prevent the downward transport of contamination as the tool is advanced; it cleans itself as the soil particles are displaced to the side. The tight seal which is created as the soil is displaced and compacted allows the collection of a discrete sample from a specific depth.

The HydroPunch® can be used to sample both groundwater and floating free product. Groundwater samples will be collected from the groundwater table to 45 feet below the groundwater table at 5-foot intervals at six locations using the HydroPunch® sampling apparatus. These six HydroPunch® samples will be taken in an upgradient (background) area (two samples), within the defined free-phase plume (two samples), and in the area immediately adjacent to the free-phase plume on the downgradient side (two samples). HydroPunch® provides 1.2 liters of sample volume, which should be sufficient for the water quality analyses detailed in Table 3.1. Should the sample volume prove to be insufficient, the analytical protocol will be modified based on sample yield at each depth interval. Three additional HydroPunch® groundwater samples will be collected from the dissolved-phase plume located downgradient of the free-phase source area. These samples will be collected near the groundwater table (from 5 feet or more below the water table surface) and will be analyzed according to the analytical protocol listed in Table 3.1. These additional samples are necessary to help define the extent of the dissolved-phase BTEX plume and to allow the calculation of the anaerobic decay constant. These data will also aid in calibration of the Bioplume II® model for the site.

#### 3.2.1.2 Existing Monitoring Well Sampling

Existing groundwater monitoring wells both upgradient and downgradient of the free-phase plume and the dissolved-phase plume will also be sampled. The following 12 wells will be sampled to facilitate Bioplume II® model calibration: MW-02-026 and MW-02-027 (background); MW-02-007 and MW-02--013 (within free-phase plume); MW-02-019, MW-02-020, and MW-02-030 (downgradient of free-phase plume); and MW-02-021, MW-02-040, MW-02-041, MW-02-042, and MW-02-043 (downgradient of the dissolved-phase plume).

### 3.2.2 Preparation for Sampling

All equipment to be used for sampling will be assembled and properly cleaned and calibrated (if required) prior to arriving in the field. In addition, all record-keeping materials will be gathered prior to leaving the office.

#### 3.2.2.1 Equipment Cleaning

All portions of sampling and test equipment that will contact the sample matrix will be thoroughly cleaned before use. This includes the HydroPunch® tool, water-level probe and cable, lifting line, test equipment for onsite use, and other equipment or portions thereof which will contact the samples. Based on the types of sample analyses to be conducted, the following cleaning protocol will be used:

- Clean with potable water and phosphate-free laboratory detergent (HP-II detergent solutions, as appropriate);
- Rinse with potable water;
- Rinse with distilled or deionized water;
- Rinse with reagent-grade methanol;
- Air dry the equipment prior to use.

Any deviations from these procedures will be documented in the field scientist's field notebook and on the groundwater sampling form.

If pre-cleaned dedicated sampling equipment is used, the cleaning protocol specified above will not be required. The EPA laboratory-supplied sample containers will be cleaned and sealed by the laboratory and therefore will not need to be cleaned in the field. The type of container provided and the method of container decontamination will be documented in the EPA's permanent record of the sampling event.

### 3.2.2.2 Equipment Calibration

As required, field analytical equipment will be calibrated according to the manufacturer's specifications prior to field use. This applies to equipment used for onsite measurements of pH, electrical conductivity, and temperature.

### 3.2.3 Sampling Procedures

Special care will be taken to prevent contamination of the groundwater and extracted samples. The two primary ways in which sample contamination can occur are through contact with improperly cleaned equipment and by cross-contamination through insufficient cleaning of equipment between wells. To prevent such contamination, the water level probe and cable used to determine static water levels and well total depths will be thoroughly cleaned before and after field use and between uses at different sampling locations according to the procedures presented in Section 3.2.2.1. In addition to the use of properly cleaned equipment, a clean pair of new, disposable nitrile gloves will be worn each time a different well is sampled.

The following paragraphs present the procedures to be followed for groundwater sample collection from the HydroPunch® and groundwater monitoring wells. These activities will be performed in the order presented below. Exceptions to this procedure will be noted in the field scientist's field notebook.

### 3.2.3.1 HydroPunch® Groundwater Sampling

#### 3.2.3.1.1 Sampling Interval and Method

The sampling depth and interval will be specified prior to driving the HydroPunch® into the ground. The ES field hydrogeologist will verify the sampling depth by measuring the length of each HydroPunch® sampling rod prior to insertion into the ground. After insertion, the drive rods or hammer will be pulled back to pull the cone out of the body of the HydroPunch® device, permitting groundwater to enter. A minimum of 6 inches of the body of the device must be in the driven hole to provide a good annular seal.

#### 3.2.3.1.2 Preparation of Location

Prior to starting the sampling procedure, the area around the hole will be cleared of foreign materials, such as brush, rocks, and debris. This will prevent sampling equipment from inadvertently contacting foreign materials near the sampling point.

#### 3.2.3.1.3 Water Level and Total Depth Measurements

Prior to removing any water from the HydroPunch® sampling device, the static water will be measured. A manometer with hollow high-density polyethylene (HDPE) tubing will be inserted into the hollow HydroPunch® device through which the groundwater sample will be acquired until the manometer indicates that groundwater has been reached. The HDPE to be attached to the manometer will then be marked at the level of the ground surface and removed from the ground. The depth to water will be determined by placing a tape measure next to the HDPE tubing and measuring the length from the base of the tubing to the ground level mark to the nearest 0.1 foot. The sampling depth will be measured to the nearest 0.1 foot by noting the depth to which the HydroPunch® tool was driven.

#### 3.2.3.1.4 Sample Extraction

Allowing for adequate fill time, the HydroPunch® sampling device will be pulled to the surface, unthreaded from the upper subassembly, and replaced with the thread retainer. The sample will be transferred directly into the analyte-appropriate sample container. The water will be carefully poured down the inner walls of the sample bottle to minimize aeration of the sample.

Unless other instructions are given by the analytical laboratory, sample containers will be completely filled so that no air space remains in the container. Excess water collected during sampling does not require special handling, per Plattsburgh AFB.

### 3.2.3.2 Groundwater Monitoring Well Sampling

#### 3.2.3.2.1 Preparation of Location

Prior to starting the sampling procedure, the area around the existing well will be cleared of foreign materials, such as brush, rocks, and debris. These procedures will prevent sampling equipment from inadvertently contacting debris around the monitoring well.

#### 3.2.3.2.2 Water Level and Total Depth Measurements

Prior to removing any water from the existing well, the static water level will be measured. An electrical water level probe will be used to measure the depth to groundwater below the datum to the nearest 0.01 foot. After measuring the static water level, the water level probe will be slowly lowered to the bottom of the well and the total well depth will be measured to the nearest 0.01 foot. Based on these measurements, the volume of water to be purged from the well will be calculated. If free-phase product is encountered, attempts will be made to sample both within and below the oil lens.

#### 3.2.3.2.3 Well Purging

The volume of water contained within the well casing at the time of sampling will be calculated, and three times the calculated volume will be removed from the well. All purge water will be placed in 55-gallon drums and disposed of according to Plattsburgh AFB procedures, as appropriate. The empty drums will be rinsed with hot water and returned to base personnel for reuse. Dedicated disposable bailers will be used for well purging.

If a well is evacuated to a dry state during purging, the well will be allowed to recharge, and the sample will be collected as soon as sufficient water is present in the well to obtain the necessary sample quantity. Sample compositing, or sampling over a lengthy period by accumulating small volumes of water at different times to obtain a sample of sufficient volume, will not be allowed.

#### 3.2.3.2.4 Sample Extraction

Dedicated, disposable, polyethylene bailers will be used to extract groundwater samples from the well. The bailer will be lowered into the water gently to prevent splashing and extracted gently to prevent creation of an excessive vacuum in the well. The sample will be transferred directly into the appropriate sample container. The water sample will be transferred from the bailer by discharging the sample from the bottom. The water will be carefully poured down the inner walls of the sample bottle to minimize aeration of the sample.

Unless other instructions are given by the analytical laboratory, sample containers will be completely filled so that no air space remains in the container. Excess water collected during sampling will be placed into the 55-gallon drums used for well purge waters and disposed of according to Plattsburgh AFB procedures, as appropriate.

### 3.2.4 Onsite Groundwater Parameter Measurement

The following sections describe the procedures to be used to analyze groundwater samples from both the HydroPunch® and existing groundwater monitoring wells at Site FT-002.

#### 3.2.4.1 Dissolved Oxygen Measurements

Except where the USEPA can obtain dissolved oxygen (DO) measurements from collected groundwater samples, DO measurements will be taken using a meter with a downhole oxygen sensor. DO measurements will be taken immediately following groundwater sample acquisition. When DO measurements will be taken in HydroPunch® holes or wells that have not yet been sampled, the HydroPunch® hole or existing well will be purged as described in Section 3.2.3.2.3 prior to taking the DO measurement.

#### 3.2.4.2 pH, Temperature, and Specific Conductance

Because the pH, temperature, and specific conductance of a groundwater sample can change significantly within a short time following sample acquisition, these parameters will be measured in the field in unfiltered, unpreserved, "fresh" water collected by the same technique as the samples taken for laboratory analyses. The measurements will be made in a clean glass container separate from those intended for laboratory analysis, and the measured values will be recorded in the groundwater sampling record.

### 3.2.5 Sample Handling

This section describes the handling of samples from the time of sampling until the samples arrive at the laboratory.

#### 3.2.5.1 Sample Preservation

The USEPA analytical support personnel will add any necessary chemical preservatives prior to shipping the containers to the site. Samples will be properly prepared for transportation to the USEPA laboratory by placing the samples in a cooler containing ice to maintain a shipping temperature of 4 degrees centigrade (°C).

#### 3.2.5.2 Sample Container and Labels

Sample containers and appropriate container lids will be provided by the USEPA. The sample containers will be filled as described in Sections 3.2.3.1.4 and 3.2.3.2.4 and the container lids will be tightly closed. The sample label will be firmly attached to the container side, and the following information will be legibly and indelibly written on the label:

- Facility name;
- Sample identification;
- Sample type (e.g., groundwater);
- Sampling date;
- Sampling time;
- Preservatives added; and
- Sample collector's initials.

#### 3.2.5.3 Sample Shipment

After the samples are sealed and labeled, they will be packaged for transport to the USEPA laboratory. The following packaging and labeling procedures will be followed:

- Package sample so that it will not leak, spill, or vaporize from its container; and
- Label container with
  - Sample collector's name, address, and telephone number;
  - Laboratory's name, address, and telephone number;
  - Description of sample;
  - Quantity of sample; and
  - Date of shipment.

The packaged samples will be delivered by ES or ARA personnel to the USEPA laboratory. Delivery will occur shortly after sample acquisition.

#### 3.2.5.4 Chain-of-Custody Control

After the samples have been collected, chain-of-custody procedures will be followed to establish a written record of sample handling and movement between the sampling site and the USEPA laboratory. Each shipping container will have a chain-of-custody form completed in triplicate by the sampling personnel. One copy of this form will be kept by the sampling contractor after sample delivery to the analytical laboratory, and the other two copies will be retained at the laboratory. One of the laboratory copies will become a part of the permanent record for the sample and will be returned with the sample analytical results. The chain-of-custody will contain the following information:

- Sample identification number;
- Sample collector's printed name and signature;
- Date and time of collection;
- Place and address of collection;
- Sample matrix;
- Chemical preservatives added;

- Analyses requested;
- Signatures of individuals involved in the chain of possession; and
- Inclusive dates of possession.

The chain-of-custody documentation will be placed inside the shipping container so that it will be immediately apparent to the laboratory personnel receiving the container, but will not be damaged or lost during transport. The shipping container will be sealed so that it will be obvious if the seal has been tampered with or broken.

#### 3.2.5.5 Sampling Records

In order to provide complete documentation of the sampling event, detailed records will be maintained by the field hydrogeologist. At a minimum, these records will include the following information:

- Sample location (facility name);
- Sample identification;
- Sample location map or detailed sketch;
- Date and time of sampling;
- Sampling method;
- Field observations of
  - Sample appearance,
  - Sample odor,
- Weather conditions;
- Water level prior to purging;
- Total well depth;
- Purge volume;
- Water level after purging;
- Well condition;
- Sampler's identification;
- Field measurements of pH, temperature, DO, and specific conductivity; and
- Any other relevant information.

Groundwater sampling information will be recorded on a groundwater sampling form. Figure 3.1 at the end of this section shows an example of the groundwater sampling record.

### 3.2.6 Laboratory Analyses

Laboratory analyses will be performed on all groundwater samples and the QA/QC samples described in Section 5. The analytical methods for this sampling event are listed in Table 3.1. Prior to sampling, arrangements will be made with USEPA analytical support personnel who will be on site during field activities to provide a sufficient number of appropriate sample containers for the samples to be collected. All containers, preservatives, and shipping requirements will be consistent with USEPA protocol or those reported in Appendix A of this plan.

USEPA analytical support personnel will specify the necessary QC samples and notify the laboratory to prepare appropriate QC sample bottles. For samples requiring chemical preservation, preservatives will be added to containers by the laboratory prior to transportation. Containers, ice chests with adequate padding, and cooling media may be sent by the laboratory to the site. Sampling personnel will fill the sample containers and return the samples to the laboratory.

## 3.3 SOIL CORE SAMPLING AND ANALYSIS

The third stage of field work to be completed at Site FT-002 will involve coring the suspected area of the free-phase plume from approximately 4 feet above the free-phase to approximately 4 feet below the free-phase to verify/validate the CPT and soil gas data. These soil cores will be located near the CPT/soil gas sampling locations to allow data comparison and verification. ARA will provide the equipment and personnel necessary to complete this activity during the period of December 7 through 10, 1993. Fifty-foot resolution of soil cores for verification purposes will be considered sufficient for the intrinsic remediation demonstration for Site FT-002.

A Gouda Soil Sampler® may be employed at the site to collect "undisturbed" soil samples at any desired depth within the range of the driving apparatus (see Section 3.1). The sampler penetrates the soil, while the Gouda Soil Sampler® cone is in position, and prevents soil substances from entering the sampling tube. When the sampler has been pushed to the depth at which the soil sample is to be taken, the section of the sampler tubing extending above the ground is withdrawn approximately 26 centimeters (cm), thus blocking the cone in the upper position. The sampler is then pushed into the soil approximately 24 cm, and pulled up to the ground surface as quickly as possible.

A Mostap-35® device may also be used to collect soil samples. The Mostap apparatus is pushed to the preferred depth, and then unlocked to cut a complete soil sample. The sampling apparatus is then withdrawn.

If the sampling techniques described above are not appropriate for the characterization of Site FT-002, continuous soil samples will be obtained using a CME® split-barrel, continuous sampling device or another similar method judged acceptable by the ES field hydrogeologist. Soil samples will be collected continuously over the full depth of the soil borehole unless an alternative sampling frequency is requested by the ES field hydrogeologist. Procedures will be modified, if necessary, to ensure good sample recovery. The soil samples collected will be removed from the continuous sampler and placed on clean aluminum foil for logging.

A portion of each soil sample will be placed in a clean glass jar for photoionization detector (PID) headspace measurements for VOCs. Representative portions of the soil samples collected for the headspace procedure will be quickly transferred to clean glass jars, sealed with aluminum foil, and held for 15 minutes at an ambient temperature.

Measurements will be made by puncturing the aluminum foil seal with the PID probe and reading the concentration of the headspace gases. The PID relates the concentration of total VOCs in the sample to an isobutylene calibration standard. It is anticipated that headspace measurements will be performed on all samples collected. The PID will also be used to monitor the worker breathing zone.

The ES field hydrogeologist will be responsible for observing all field investigation activities, maintaining a detailed descriptive log of all subsurface materials recovered, photographing representative samples, and properly labeling and storing samples. An example of the proposed geologic boring log form is presented in Figure 3.2 at the end of this section. The descriptive log may contain:

- Sample interval (top and bottom depth);
- Sample recovery;
- Presence or absence of contamination;
- Lithologic description, including relative density, color, major textural constituents, minor constituents, porosity, relative moisture content, plasticity of fines, cohesiveness, grain size, structure or stratification, relative permeability, and any other significant observations; and
- Depths of lithologic contacts and/or significant textural changes will be measured and recorded to the nearest 0.1 foot.

The purpose of the soil corings is to verify/validate the LIF CPT and soil gas data. Site hydrogeologic characterization of Site FT-002 already has been accomplished.

Although soil cuttings should be very minimal, soil cuttings exhibiting petroleum hydrocarbon or solvent contamination based on PID screening will be drummed and stored onsite during the sampling operations. Any drummed material will be transferred to Plattsburgh AFB for disposition, as necessary.

### 3.3.1 Borings Location and Datum Survey

The location of and other relevant site information for the soil corings taken for verification purposes will be recovered by the ES field hydrogeologist. The horizontal location will be measured relative to established Plattsburgh AFB coordinates. Horizontal coordinates will be measured to the nearest 0.01 foot. Vertical location of the ground surface relative to the measurement datum will also be measured relative to USGS mean sea level data. The ground surface elevation will be measured to the nearest 0.1 foot, and the measurement datum will be measured to the nearest 0.01 foot.

### 3.3.2 Site Restoration

After sampling is complete, each soil coring site will be restored as close to its original condition as possible. Although soil cuttings should be very minimal, any clean soil cuttings brought to the surface will be placed in 55-gallon drums for disposition by Plattsburgh AFB personnel, as necessary.

**Figure 3.1**
**Groundwater Sampling Log**

SAMPLING LOCATION ___________
SAMPLING DATE(S)_____________

GROUND WATER SAMPLING RECORD - MONITORING WELL ______________
(number)

REASON FOR SAMPLING: [ ] Regular Sampling; [ ] Special Sampling;
DATE AND TIME OF SAMPLING: ____________, 19___ ________ a.m./p.m.
SAMPLE COLLECTED BY: ___________________ of __________________
WEATHER:___________________________________________________________
DATUM FOR WATER DEPTH MEASUREMENT (Describe):___________________
___________________________________________________________________
___________________________________________________________________

MONITORING WELL CONDITION:

[ ] LOCKED: [ ] UNLOCKED
WELL NUMBER (IS - IS NOT) APPARENT
STEEL CASING CONDITION IS:_________________________________
INNER PVC CASING CONDITION IS:_____________________________
WATER DEPTH MEASUREMENT DATUM (IS - IS NOT) APPARENT
[ ] DEFICIENCIES CORRECTED BY SAMPLE COLLECTOR
[ ] MONITORING WELL REQUIRED REPAIR (describe):_____________
___________________________________________________________
___________________________________________________________

Check-off

1 [ ] EQUIPMENT CLEANED BEFORE USE WITH______________________
Items Cleaned (List):______________________________
___________________________________________________
___________________________________________________

2 [ ] WATER DEPTH ____________________________FT. BELOW DATUM
Measured with:_____________________________________

3 [ ] WATER-CONDITION BEFORE WELL EVACUATION (Describe):
Appearance:________________________________________
Odor:______________________________________________
Other Comments:____________________________________

4 [ ] WELL EVACUATION:
Method:____________________________________________
Volume Removed:____________________________________
Observations: Water (slightly - very) cloudy
Water level (rose - fell - no change)
Water odors:_______________________
Other comments:____________________

5 [ ] SAMPLE EXTRACTION METHOD:

[ ] Bailer made of:______________________________
[ ] Pump, type:______________________________
[ ] Other, describe:______________________________
______________________________

Sample obtained is [ ] GRAB; [ ] COMPOSITE SAMPLE

6 [ ] ON-SITE MEASUREMENTS:

Temp: __________ ° ______ Measured with:______________
pH: ________________ Measured with:______________
Conductivity: __________ Measured with:______________
Other: ______________________________
______________________________

7 [ ] SAMPLE CONTAINERS (material, number, size):______________
______________________________
______________________________
______________________________

8 [ ] ON-SITE SAMPLE TREATMENT:

[ ] Filtration: Method____________ Containers:______________
Method____________ Containers:______________
Method____________ Containers:______________

[ ] Preservatives added:

Method____________ Containers:______________
Method____________ Containers:______________
Method____________ Containers:______________
Method____________ Containers:______________

9 [ ] CONTAINER HANDLING:

[ ] Container Sides Labeled
[ ] Container Lids Taped
[ ] Containers Placed in Ice Chest

10 [ ] OTHER COMMENTS:______________________________
______________________________
______________________________
______________________________
______________________________

# BOREHOLE LOG

| | | |
|---|---|---|
| ~~TE~~ NAME AND LOCATION | DRILLING METHOD: | BORING NO. |
| | | SHEET |
| | SAMPLING METHOD: | OF |
| | | DRILLING |
| | | START / FINISH |
| | WATER LEVEL | TIME / TIME |
| | TIME | |
| | DATE | DATE / DATE |
| ~~DA~~TUM ELEVATION | CASING DEPTH | |
| ~~D~~RILL RIG | SURFACE CONDITIONS | |
| ~~A~~NGLE BEARING | | |
| ~~S~~AMPLE HAMMER TORQUE FT.-LBS | | |

| DEPTH IN FEET (ELEVATION) | BLOWS/ 6 IN. ON SAMPLER (RECOVERY) | CORES: RUN NO. | CORES: NO. AND SIZE OF CORE PIECES | CORES: % RECOVERY | CORES: RQD | SOIL DESCRIPTION OR ROCK LITHOLOGY | SYMBOL | ROCK STRUCTURE | SAMPLER AND BIT | CASING TYPE | BLOWS/FOOT ON CASING | TEST RESULTS: DEPTH IN FEET FROM | TEST RESULTS: DEPTH IN FEET TO | TEST RESULTS: PERMAEABILITY CM./SEC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | |

Figure 3.2
Geologic Boring Log

DRILLING CONTR

RL

LOGGED BY ______ CHK'D BY ______

DATE ______

# SECTION 4

# REMEDIAL OPTION EVALUATION AND EE/CA REPORT

Upon completion of field work, the Bioplume II® numerical groundwater model will be used to determine the fate and transport of fuel hydrocarbons and chlorinated solvents dissolved in groundwater at the site. Based upon model predictions of contaminant concentration and distribution through time, and upon potential exposure pathways, the potential risk to human health and the environment will be assessed. If it is shown that natural attenuation of BTEX compounds and/or chlorinated solvents is sufficient to reduce the potential risk to human health and the environment to acceptable levels, ES will recommend implementation of the natural attenuation coupled with long-term monitoring remedial option. If natural attenuation is chosen, ES will prepare a site-specific, long-term monitoring plan which will specify the location of point-of-compliance monitoring wells and sampling frequencies.

If the natural attenuation remedial option is deemed inappropriate for use at this site, institutional controls such as groundwater or land use restrictions will be evaluated to determine if they will be sufficient to reduce the risk to human health and the environment to acceptable levels. If institutional controls are inappropriate, remedial options which could reduce risks to acceptable levels will be evaluated and the most appropriate remedial options recommended. Potential remedial options include, but are not limited to, free-product recovery, groundwater pump-and-treat, enhanced biological treatment, bioventing, air sparging, and *in situ* reactive barrier walls. The reduction in dissolved BTEX that should result from remedial activities will be used to produce a new input file for the Bioplume II® model. The model will then be used to predict the BTEX plume (and risk) reduction that should result from remedial actions

Upon completion of Bioplume II® modeling and remedial option selection, a report detailing the results of the modeling and remedial option selection will be prepared. This report will follow the outline presented in Figure 4.1 and will contain an introduction, site description, identification of remediation objectives, description of remediation alternatives, an analysis of remediation alternatives, and the recommended remedial approach. This report will also contain the results of the site characterization activities described herein and a description of the Bioplume II® model developed for this site.

## FIGURE 4.1

## EXAMPLE EE/CA REPORT OUTLINE

**INTRODUCTION**

**SITE DESCRIPTION**
- Background
- Soil and Groundwater Characteristics
- Site Contamination

**IDENTIFICATION OF REMEDIATION OBJECTIVES**
- Potential Pathways for Human/Ecological Contact
- Chemical-Specific Applicable or Relevant and Appropriate Requirements (ARARs.)

**DESCRIPTION OF REMEDIATION ALTERNATIVES**
- Natural Attenuation/Long-Term Monitoring
- Alternative 2 (Site Specific)
- Alternative 3 (Site Specific)

**ANALYSIS OF REMEDIATION ALTERNATIVES**
- Protectiveness (BioPlume® Model Results & Discussion)
- Implementability
  - *Technical*
  - *Administrative (Political)*
- Cost
  - *Capital Costs*
  - *Operating Costs*
  - *Present Worth Cost*

**RECOMMENDED REMEDIATION APPROACH**

How does the recommended technology offer adequate protection for less cost.

**APPENDIX A:** Supporting Data and Documentation

**APPENDIX B:** Site Specific BioPlume II® Model Input and Results

# SECTION 5

# QUALITY ASSURANCE/QUALITY CONTROL

Field QA/QC procedures will include collection of field duplicates and rinseate, field and trip blanks; decontamination of the water level probe and cable; use of analyte appropriate containers; and chain-of-custody procedures for sample handling and tracking. All samples to be transferred to the USEPA for analysis will be clearly labeled to indicate sample number, location, matrix (e.g., groundwater), and analyses requested. Samples will be preserved in accordance with the analytical methods to be used, and water sample containers will be packaged in coolers with ice to maintain a temperature of 4 °C.

All field sampling activities will be recorded in a bound, sequentially paginated field notebook in permanent ink. All sample collection entries will include the date, time, sample locations and numbers, notations of field observations, and the sampler's name and signature. Field QC samples will be collected in accordance with the program described below, and as summarized in Table 5.1.

QA/QC sampling will include collection and analysis of duplicate samples, rinseate blanks, field/trip blanks, and matrix spike samples. Internal laboratory QC analyses will involve laboratory control samples (LCSs) and laboratory method blanks (LMBs). QA/QC objectives for each of these samples, blanks, and spikes are described below.

HydroPunch® groundwater samples should provide sufficient volume for some duplicate analysis. Refer to Table 3.1 for further details on volume requirements.

One rinseate sample will be collected for every 10 or less groundwater samples collected from existing wells. Because disposable bailers may be used for this sampling event, the rinseate sample will consist of a sample of distilled water poured into a bailer and subsequently transferred into a sample container provided by the laboratory. Rinseate samples will be analyzed for VOCs only.

A field blank will be collected for every 20 or less groundwater samples (both from HydroPunch® and existing well sampling events) to assess the effects of ambient conditions in the field. The field blank will consist of a sample of distilled water poured into a laboratory-supplied sample container while sampling activities are underway. The field blank will be analyzed for VOCs.

A trip blank will be analyzed to assess the effects of ambient conditions and conditions on sampling results during the transportation of samples. The trip blank will be prepared by the laboratory and will be transported inside one of the coolers containing samples. This sample will be analyzed for VOCs.

TABLE 5.1

FIELD QA/QC SAMPLE PROGRAM

PLATTSBURGH AFB

| QA/QC Sample Types | Frequency Collected and/or Analyzed | Analytical Methods |
|---|---|---|
| Duplicates | 2 Samples (10%) | VOCs |
| Rinseate Blanks | 2 Samples (10%) | VOCs |
| Field Blanks | 1 Sample (5%) | VOCs |
| Trip Blanks | One per shipping cooler | VOCs |
| Matrix Spike Samples | Once per sampling event | VOCs |
| Laboratory Control Sample | Once per method per medium | Laboratory Control Charts (Method Specific) |
| Laboratory Method Blanks | Once per method per medium | Laboratory Control Charts (Method Specific) |

Matrix spikes will be prepared in the laboratory and used to establish matrix effects for samples analyzed for VOCs.

LCSs and LMBs will be prepared internally by the laboratory and will be analyzed each day samples from the site are analyzed. Samples will be re-analyzed in cases where the LCS or LMB are out of the control limits. Control charts for LCSs and LMBs will be developed by the laboratory and monitored for the analytical methods used.

# SECTION 6

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# APPENDIX A

## CONTAINERS, PRESERVATIVES, PACKAGING, AND SHIPPING REQUIREMENTS FOR GROUND WATER SAMPLES

Table 8.2a: Containers, Preservation, Packaging, and Shipping Requirements for ASC Ground-Water Samples

| Analysis | Bottles and Jars | Preservation | Holding Time | Volume of Sample | Shipping | Normal Packaging |
|---|---|---|---|---|---|---|
| GROUND WATER | | | | | | |
| Low Concentration (ICL Organics) | | | | | | |
| ICL VOCs | Two 40-ml vials with Teflon-lined caps | Cool to 4°C | 10 days | Fill completely | Delivered daily | Bubble pack |
| ICL Semivolatiles | Two 1-liter glass bottles with Teflon-lined lids | Cool to 4°C | 5 days until extraction, 40 days after extraction | Fill 90% full | Delivered daily | Bubble pack |
| ICL Pesticides/PCBs | Two 1-liter amber glass bottles with Teflon-lined lids | Cool to 4°C | 5 days until extraction, 40 days after extraction | Fill 75% full | Delivered daily | Bubble pack |
| PCDDs/PDDFs | Two 1-liter amber glass bottles with Teflon-lined lids | Cool to 4°C | 30 days until extraction, 45 days after extraction | Fill 90% full | Delivered daily | Bubble Pack |
| Herbicides | Two 1-liter amber glass bottles with Teflon-lined lids | Cool to 4°C | 7 days to extraction, 30 days after extraction | Fill 90% full | Delivered daily | Bubble Pack |
| Carbamates | Two 1-liter amber glass bottles with Teflon-lined lids | Cool to 4°C | 28 days | Fill 90% full | Delivered daily | Bubble Pack |
| Ethylene dibromide | Two 40-ml vials with Teflon-lined caps | Cool to 4°C | 5 days | Fill completely | Delivered daily | Bubble Pack |
| Ethylene glycol | Two 40-ml vials with Teflon-lined caps | Cool to 4°C | 14 days | Fill completely | Delivered daily | Bubble Pack |
| Low Concentration (ICL Inorganics) | | | | | | |
| ICL Metals | One 1-liter polyethylene bottle | Filter immediately, $HNO_3$ to pH <2, cool to 4°C | 6 months except Hg 28 days | Fill 90% full | Delivered daily | Bubble pack |

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Table 8.2a: (continued)
(Page 2 of 5)

| Analysis | Bottles and Jars | Preservation | Holding Time | Volume of Sample | Shipping | Normal Packaging |
|---|---|---|---|---|---|---|
| Low Concentration (ICL Inorganics) continued | | | | | | |
| Cyanide | One 1-liter polyethylene bottle | Filter immediately, 0.6 g ascorbic acid NAOH to pH >12, cool to 4°C, | 14 days | Fill 90% full | Delivered daily | Bubble pack |
| Low Concentration (Organics and Inorganics) | | | | | | |
| Ammonia | One 1-liter polyethylene bottle | $H_2SO_4$ to pH <2 Cool to 4°C | 28 days | Fill 90% full | Delivered daily | Bubble pack |
| Boron | One 1-liter polyethylene bottle | Filter immediately, $HNO_3$ to pH <2 Cool to 4°C | 6 months | Fill 90% full | Delivered daily | Bubble pack |
| Fluoride | One 1-liter polyethylene bottle | Filter immediately, Cool to 4°C | 28 days | Fill 90% full | Delivered daily | Bubble pack |
| Sulfate | One 1-liter polyethylene bottle | Filter immediately, Cool to 4°C | 28 days | Fill 90% full | Delivered daily | Bubble pack |
| Sulfide | One 1-liter polyethylene bottle | Filter immediately, Zinc acetate and sodium hydroxide to pH >9 Cool to 4°C | 7 days | Fill 90% full | Delivered daily | Bubble pack |
| Chloride | One 1-liter polyethylene bottle | Filter immediately, Cool to 4°C | 28 days | Fill 90% full | Delivered daily | Bubble pack |
| Bromide | One 1-liter polyethylene bottle | Filter immediately, Cool to 4°C | 28 days | Fill 90% full | Delivered daily | Bubble pack |
| Nitrate/Nitrite | One 1-liter polyethylene bottle | Filter immediately, $H_2SO_4$ to pH <2 Cool to 4°C | 28 days | Fill 90% full | Delivered daily | Bubble pack |
| Alkalinity | One 1-liter polyethylene bottle | Cool to 4°C | 14 days | Fill 90% full | Delivered daily | Bubble pack |

Table 8.2a: (continued)
(Page 3 of 5)

| Analysis | Bottles and Jars | Preservation | Holding Time | Volume of Sample | Shipping | Normal Packaging |
|---|---|---|---|---|---|---|
| Total Phosphorus | One 1-liter polyethylene bottle | $H_2SO4$ to pH <2 Cool to 4°C | 28 days | Fill 90% full | Delivered daily | Bubble pack |
| Total Organic Carbon | One 1-liter glass bottle | $H_2SO_4$ to pH <2 Cool to 4°C | 28 days | Fill completely | Delivered daily | Bubble pack |
| Total Organic Halides | Two 1-liter glass bottles | $H_2SO_4$ to pH <2 0.008% $NaS_2O_3$ if residual chlorine present, cool to 4°C | 7 days | Fill completely | Delivered daily | Bubble pack |
| Chemical Oxygen Demand | One 1-liter polythylene bottle | $H_2SO_4$ to pH <2 Cool to 4°C | 28 days | Fill 90% full | Delivered daily | Bubble pack |
| Biological Oxygen Demand | One 1-liter polythylene bottle | Cool to 4°C | 48 hours | Fill completely | Delivered daily | Bubble pack |
| Total Suspended Solids | One 1-liter polythylene bottle | Cool to 4°C | 7 days | Fill completely | Delivered daily | Bubble pack |
| Total Dissolved Solids | One 1-liter polythylene bottle | Cool to 4°C | 48 hours | Fill 90% full | Delivered daily | Bubble pack |
| Corrosivity | One 1-liter glass bottle | Cool to 4°C | 28 days | Fill 90% full | Delivered daily | Bubble pack |
| pH | One 1-liter glass bottle | Cool to 4°C | 28 days | Fill 90% full | Delivered daily | Bubble pack |
| Specific Conductance | One 1-liter polyethylene bottle | Cool to 4°C | 28 days | Fill 90% full | Delivered daily | Bubble pack |
| Radionuclides: | | | | | | |
| Gross alpha and beta | One 1-liter polyethylene bottle | Filter immediately, $HNO_3$ to pH <2 Cool to 4°C | 6 months | Fill 90% Full | Delivered daily | Bubble pack |
| Gamma scan | One 1-liter polyethylene bottle | Filter immediately, $HNO_3$ to pH <2 Cool to 4°C | 6 months | Fill 90% Full | Delivered daily | Bubble pack |

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Table 8.2a: (continued)
(Page 4 of 5)

| Analysis | Bottles and Jars | Preservation | Holding Time | Volume of Sample | Shipping | Normal Packaging |
|---|---|---|---|---|---|---|
| Americium-241 | One 1-liter polyethylene bottle | Filter immediately, $HNO_3$ to pH <2, Cool to 4°C | 6 months | Fill 90% Full | Delivered daily | Bubble pack |
| Plutonium-239/240 | One 1-liter polyethylene bottle | Filter immediately, $HNO_3$ to pH <2, Cool to 4°C | 6 months | Fill 90% Full | Delivered daily | Bubble pack |
| Plutonium-241 | One 1-liter polyethylene bottle | Filter immediately, $HNO_3$ to pH <2, Cool to 4°C | 6 months | Fill 90% Full | Delivered daily | Bubble pack |
| Strontium-90 | One 1-liter polyethylene bottle | Filter immediately $HNO_3$ to pH <2, Cool to 4°C | 6 months | Fill 90% Full | Delivered daily | Bubble pack |
| Tritium | One 40-ml vial with teflon lined cup | Filter immediately, Cool to 4°C | 6 months | Fill 90% Full | Delivered daily | Bubble pack |
| Uranium-234 | One 1-liter polyethylene bottle | Filter immediately, $HNO_3$ to pH <2, Cool to 4°C | 6 months | Fill 90% Full | Delivered daily | Bubble pack |
| Uranium-235 | One 1-liter polyethylene bottle | Filter immediately, $HNO_3$ to pH <2, Cool to 4°C | 6 months | Fill 90% Full | Delivered daily | Bubble pack |
| Uranium-238 | One 1-liter polyethylene bottle | Filter immediately, $HNO_3$ to pH <2, Cool to 4°C | 6 months | Fill 90% Full | Delivered daily | Bubble pack |
| Radium-226 | One 1-liter polyethylene bottle | Filter immediately, $HNO_3$ to pH <2, Cool to 4°C | 6 months | Fill 90% Full | Delivered daily | Bubble pack |
| Radium-228 | Two 1-liter polyethylene bottles | Filter immediately, $HNO_3$ to pH <2, Cool to 4°C | 6 months | Fill 90% Full | Delivered daily | Bubble pack |

Table 8.2a: (continued)
(Page 5 of 5)

| Analysis | Bottles and Jars | Preservation | Holding Time | Volume of Sample | Shipping | Normal Packaging |
|---|---|---|---|---|---|---|
| Thorium-232 | One 1-liter polyethylene bottle | Filter immediately, $HNO_3$ to pH <2 Cool to 4°C | 6 months | Fill 90% Full | Delivered daily | Bubble pack |

Note: Parameters with similar containers and preservation requirements may be combined

# APPENDIX B

# AVAILABLE SOIL AND GROUNDWATER ANALYTICAL RESULTS

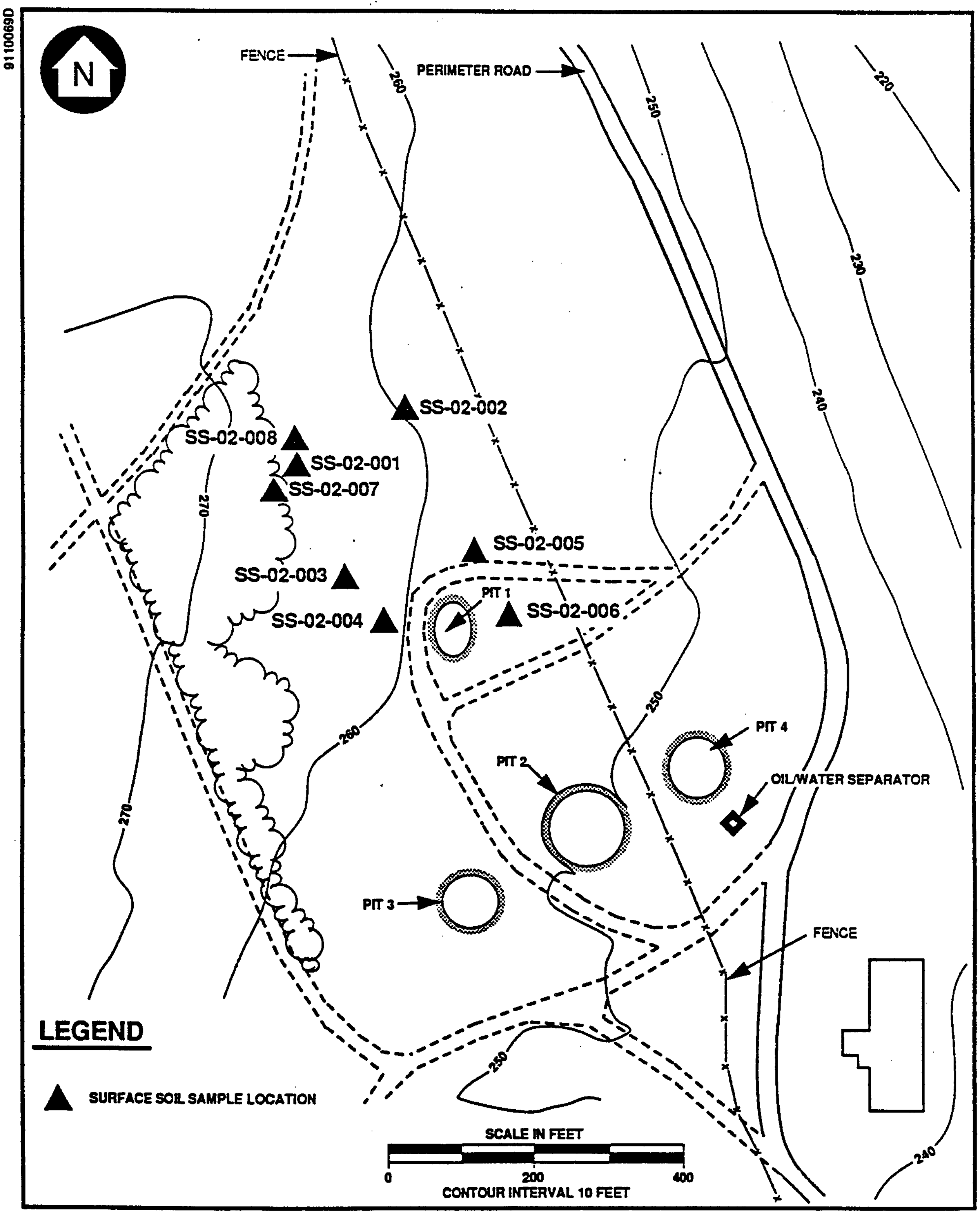



**FIGURE 2-4:** Phase I RI Surface Soil Sample Locations

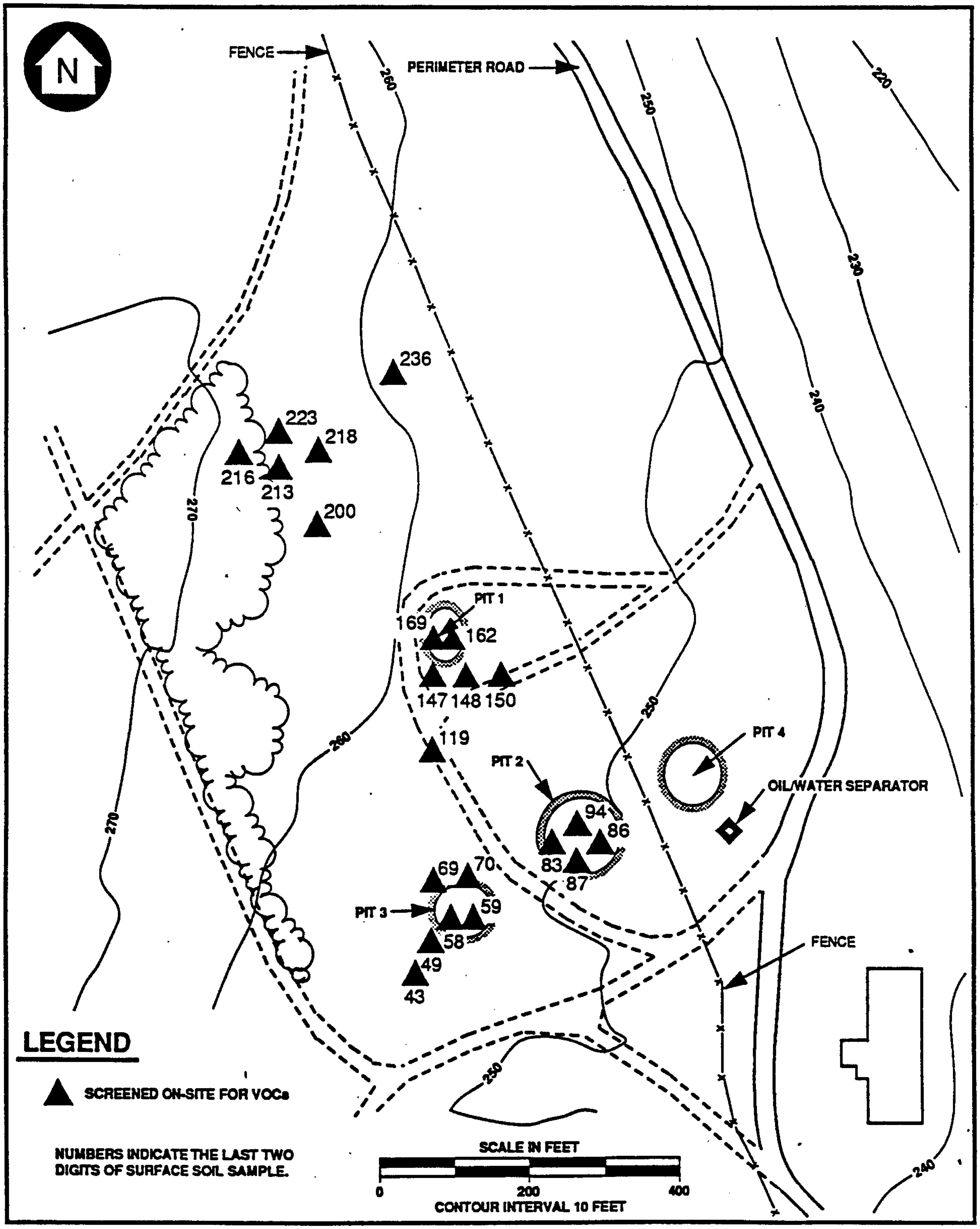



FIGURE 2-7: Phase II RI Surface Soil Samples Analyzed On-site for VOCs

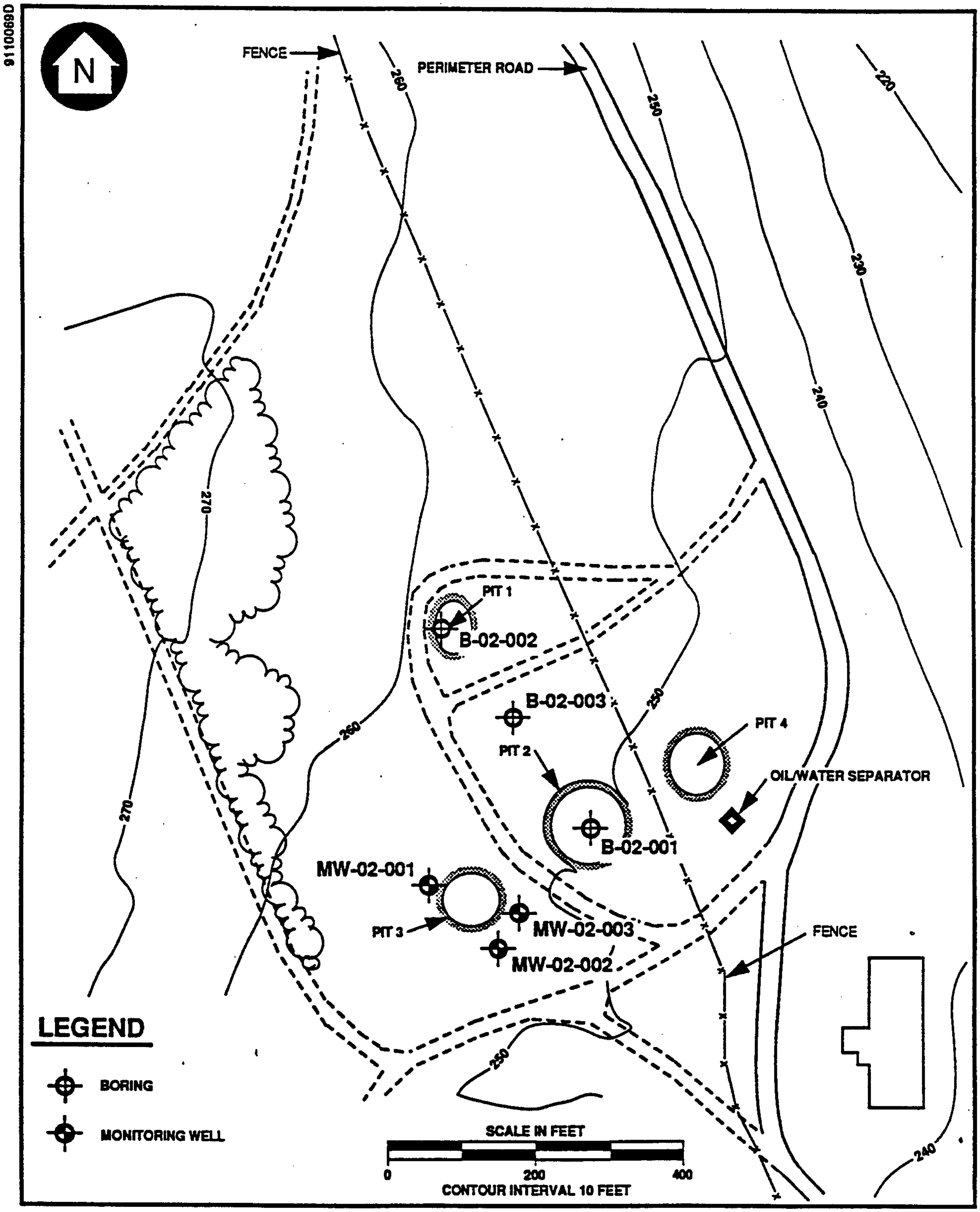



**FIGURE 2-10:** SI Subsurface Soil Explorations

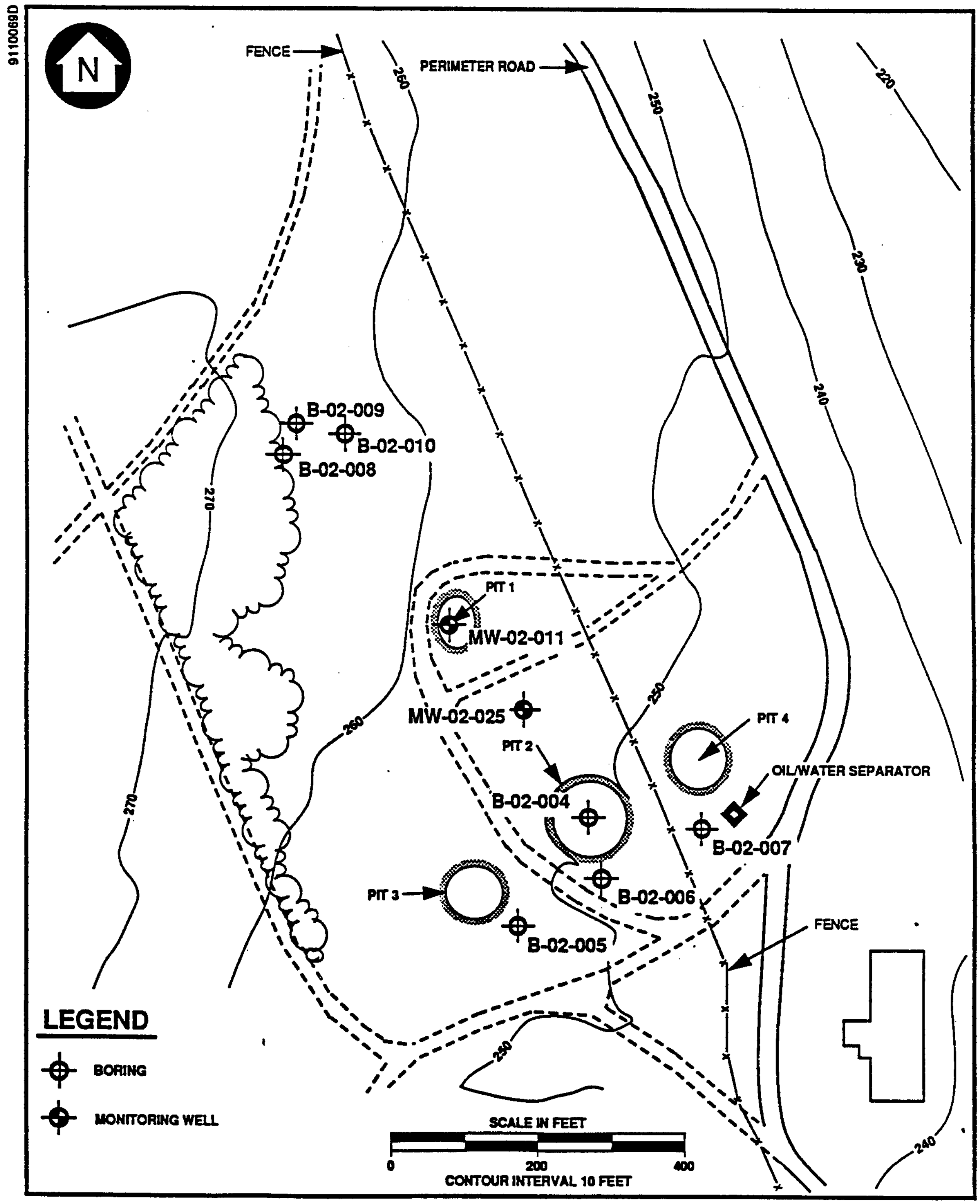



**FIGURE 2-11:** Phase I RI Subsurface Soil Explorations

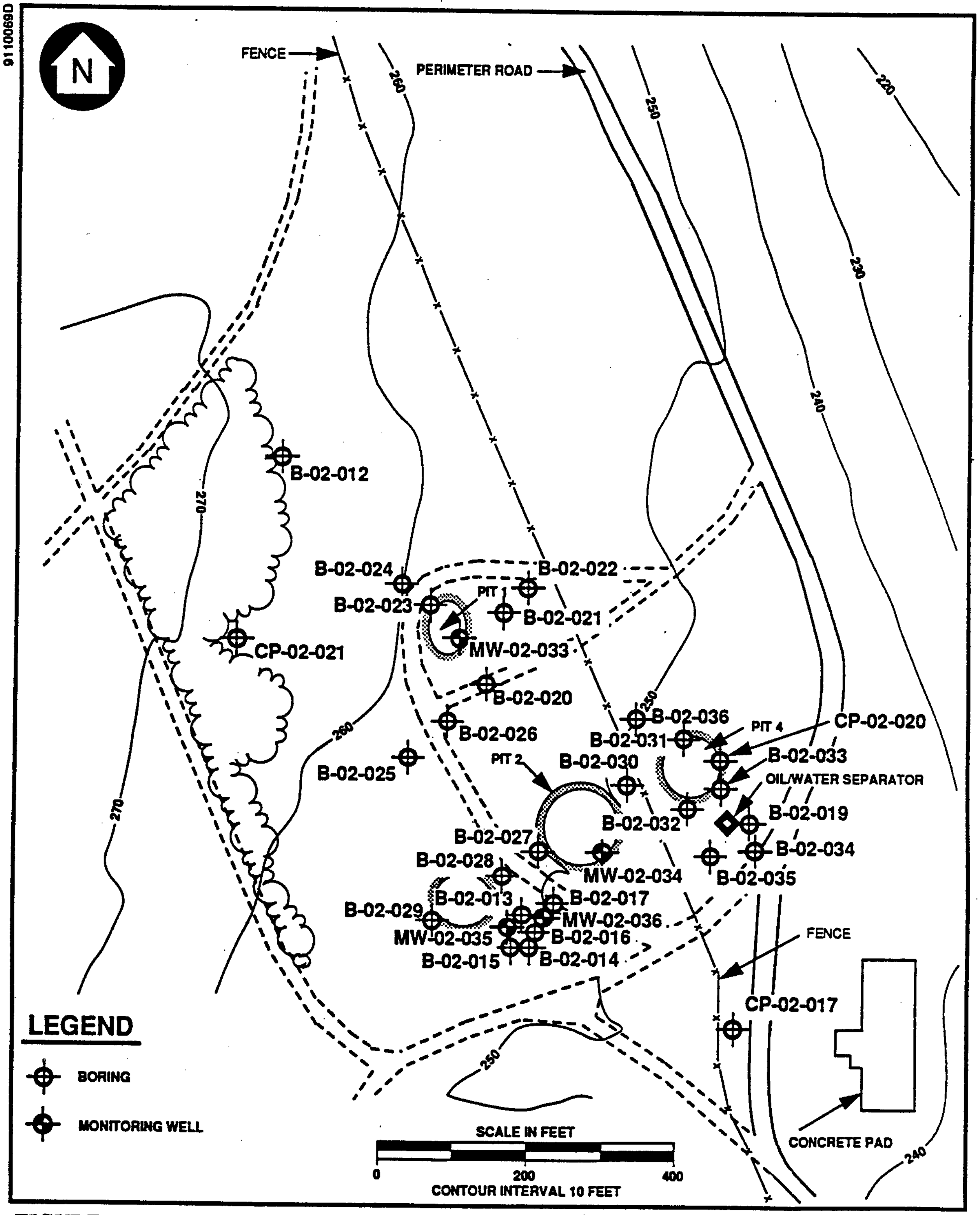



**FIGURE 2-12:** Phase II RI Subsurface Soil Explorations

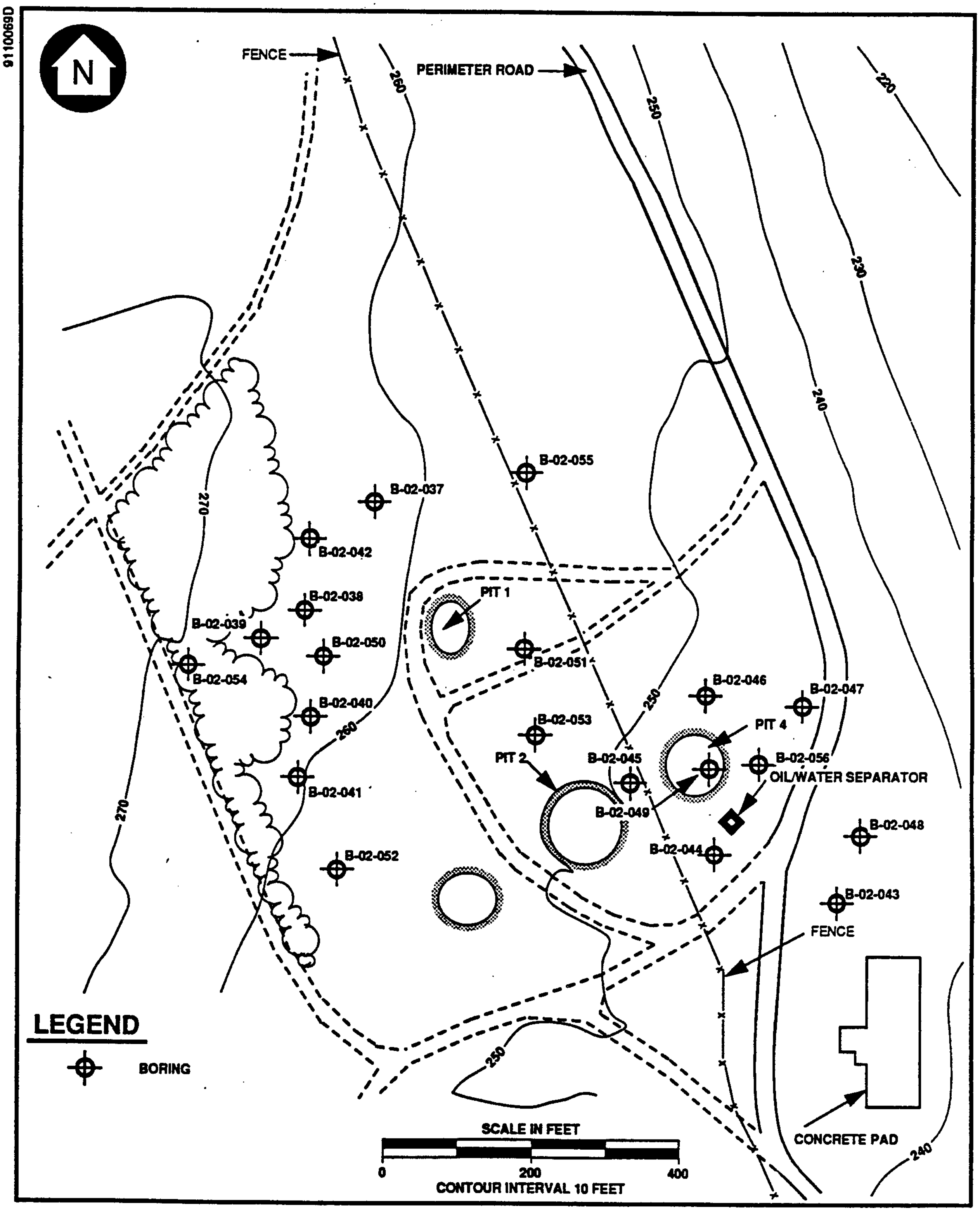
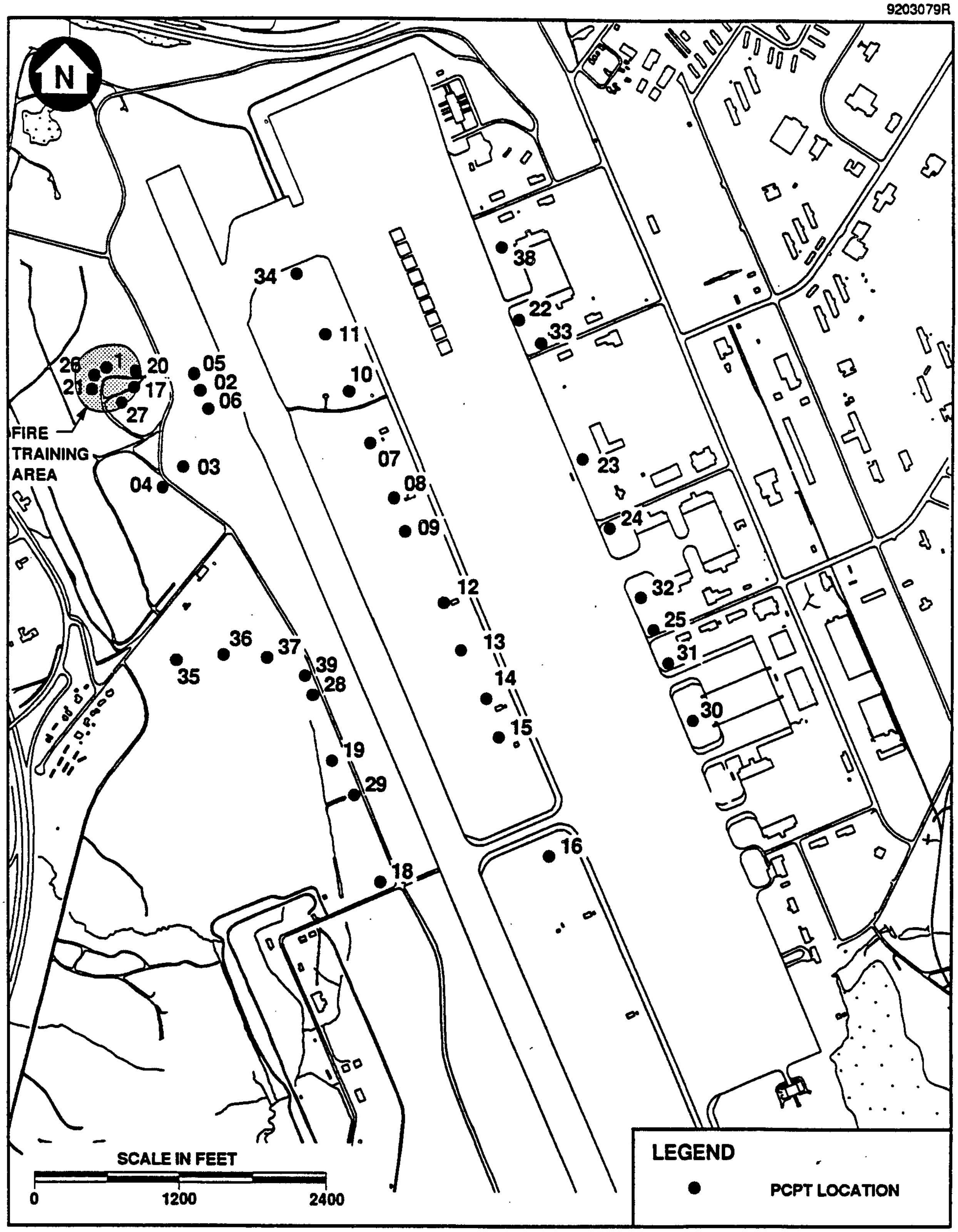
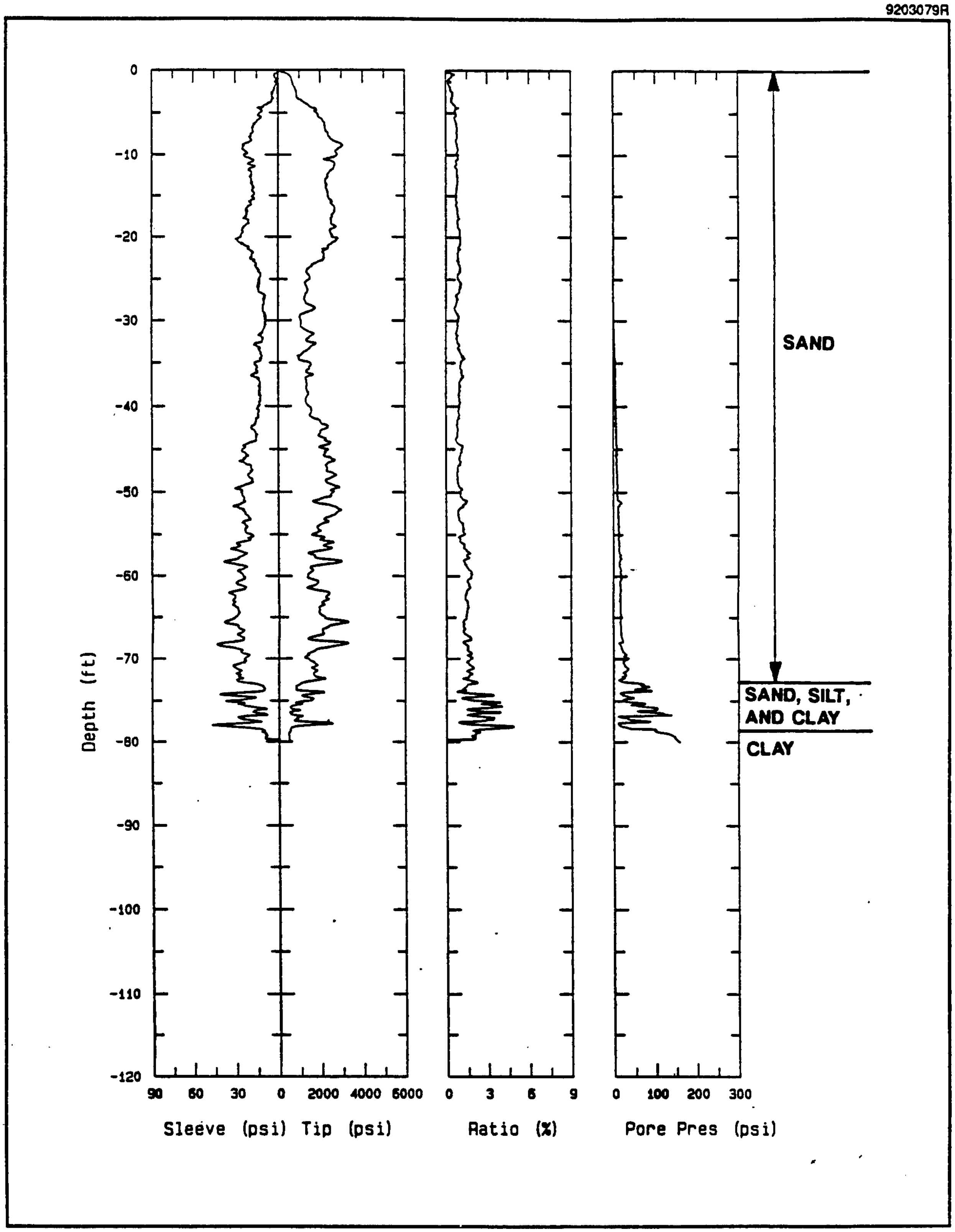



**FIGURE 4-13:** FT-002 Subsurface Explorations - October 1991




**PCPT BORING LOCATIONS**




**TYPICAL PCPT PLOT**

The following PCPT borings did not have stratigraphic logs made as they were located close to an existing logged well or another logged PCPT boring.

CP-02-006
CP-02-011
CP-02-016
CP-02-026
CP-02-027
CP-02-029
CP-02-032
CP-02-033
CP-02-038
CP-02-039

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ABB Environmental, Plattsburgh Air Force Base

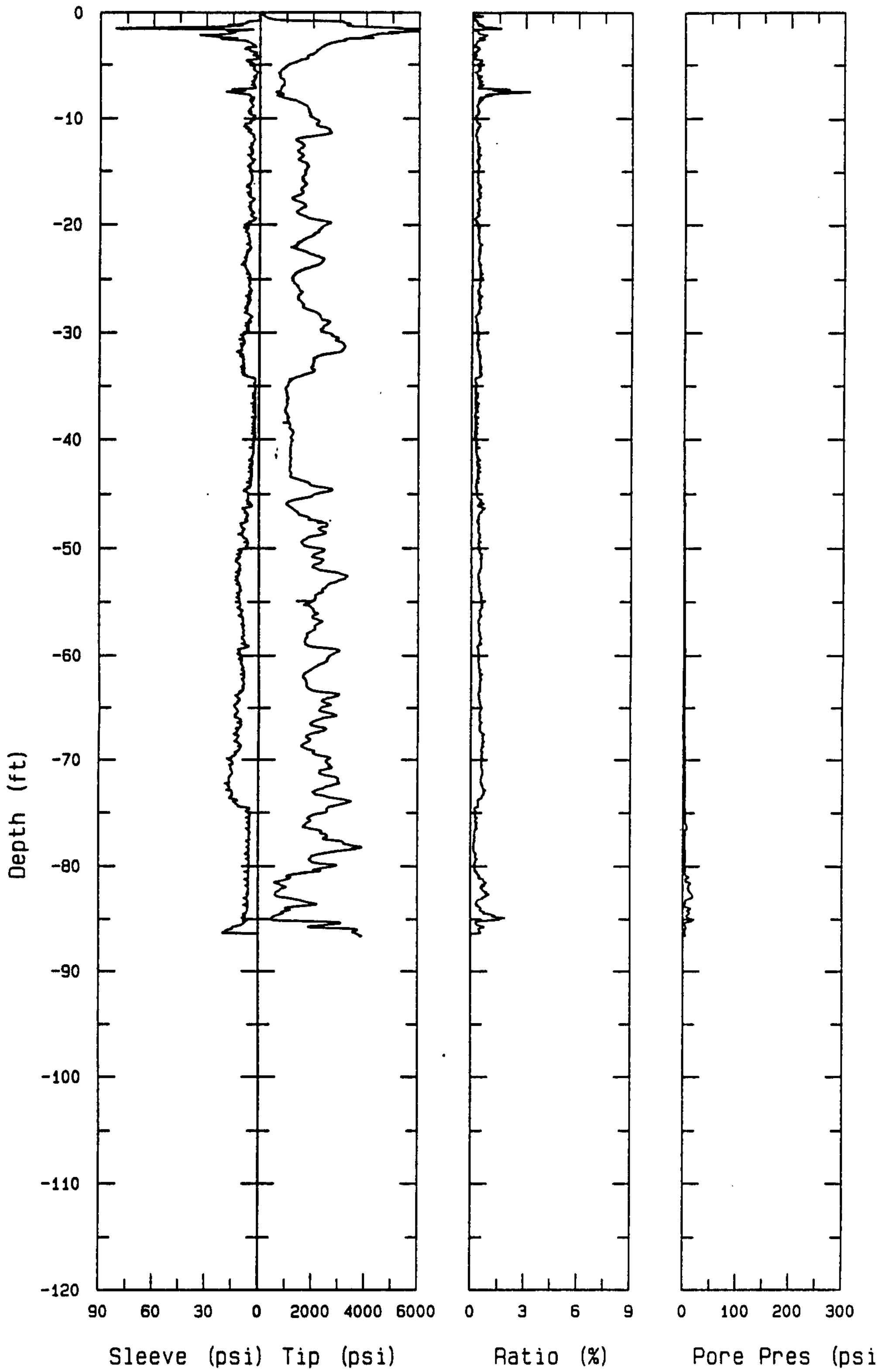

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ABB Environmental, Plattsburgh Air Force Base

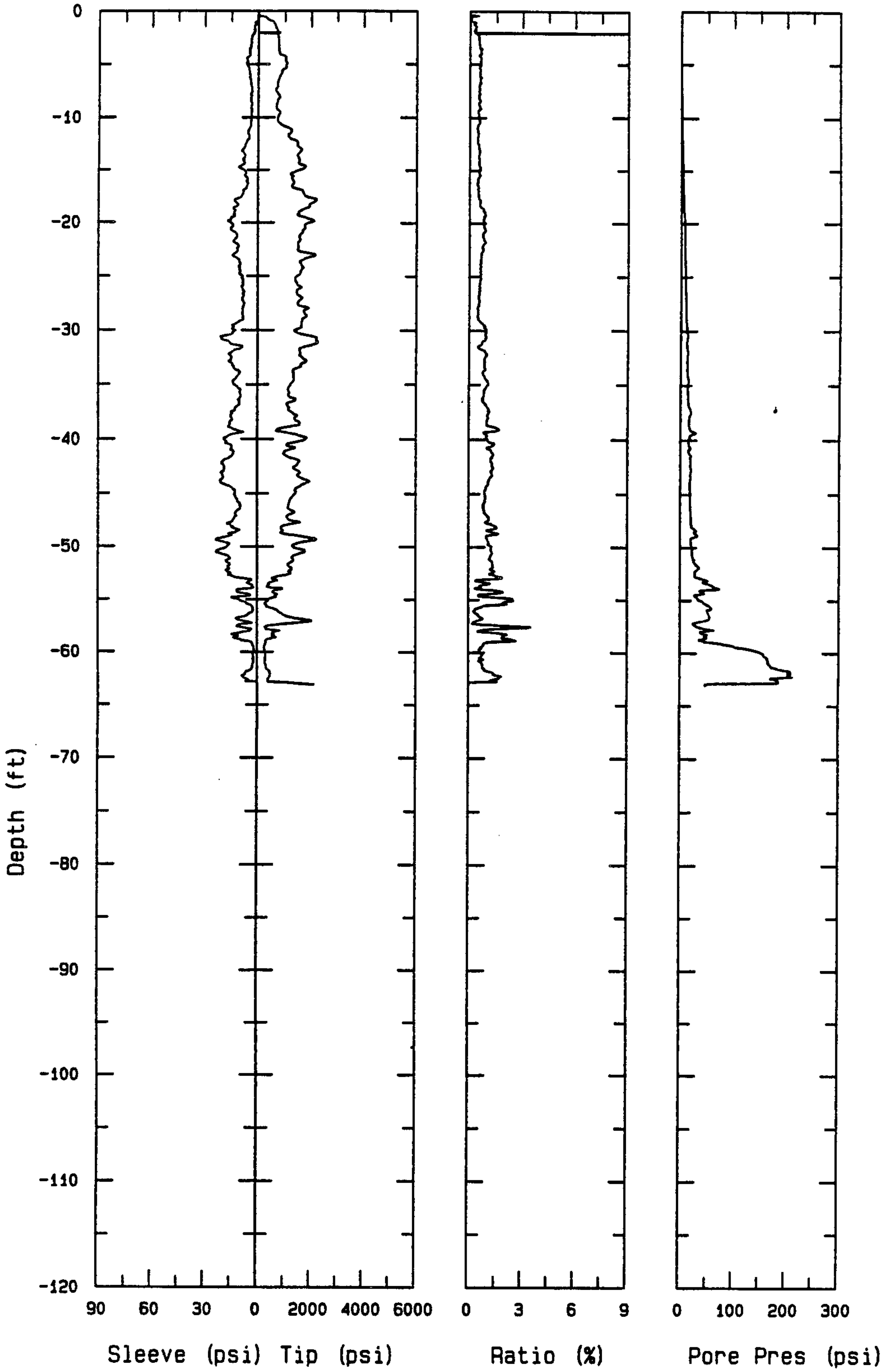

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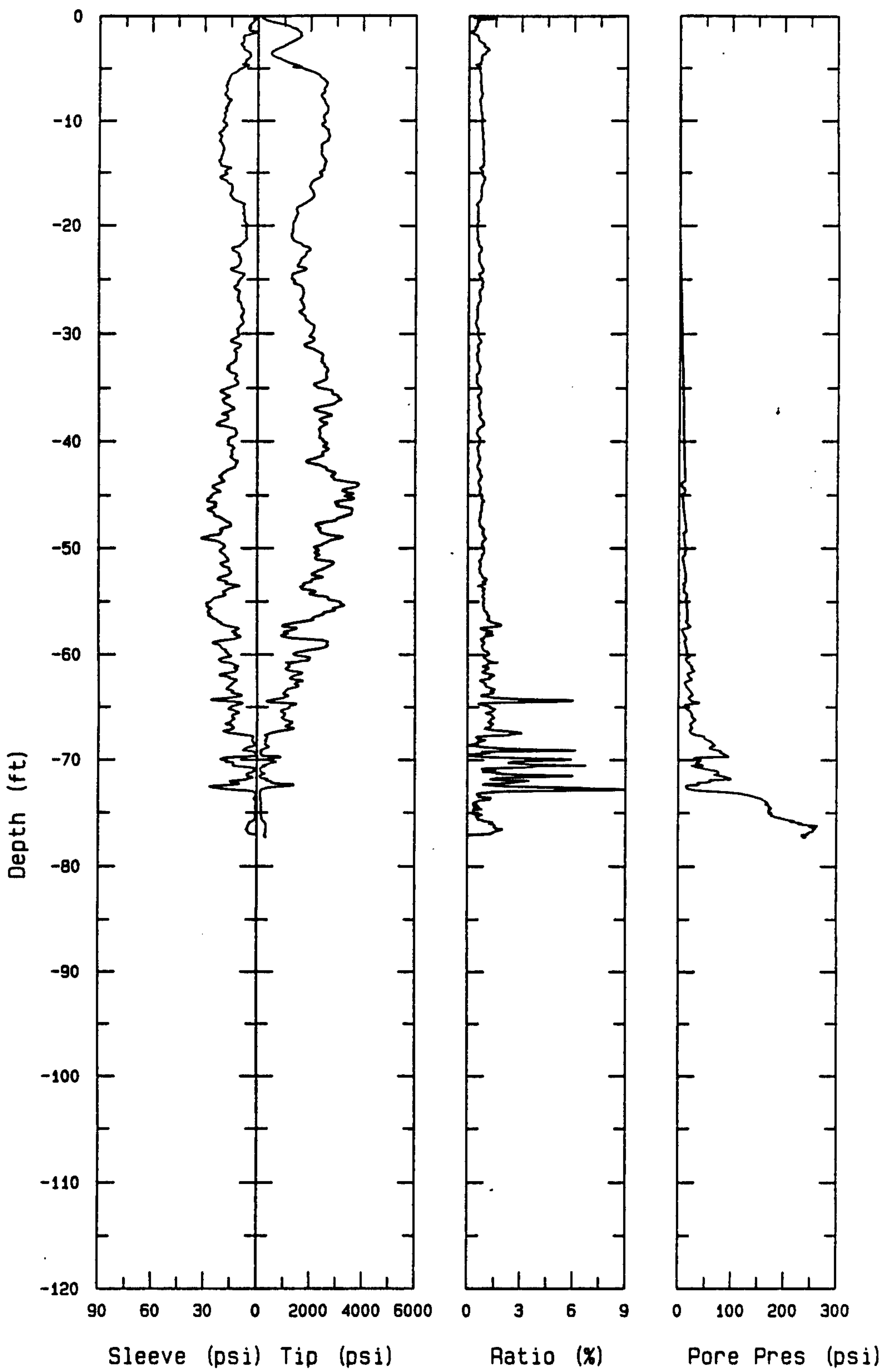
ABB Environmental, Plattsburgh Air Force Base



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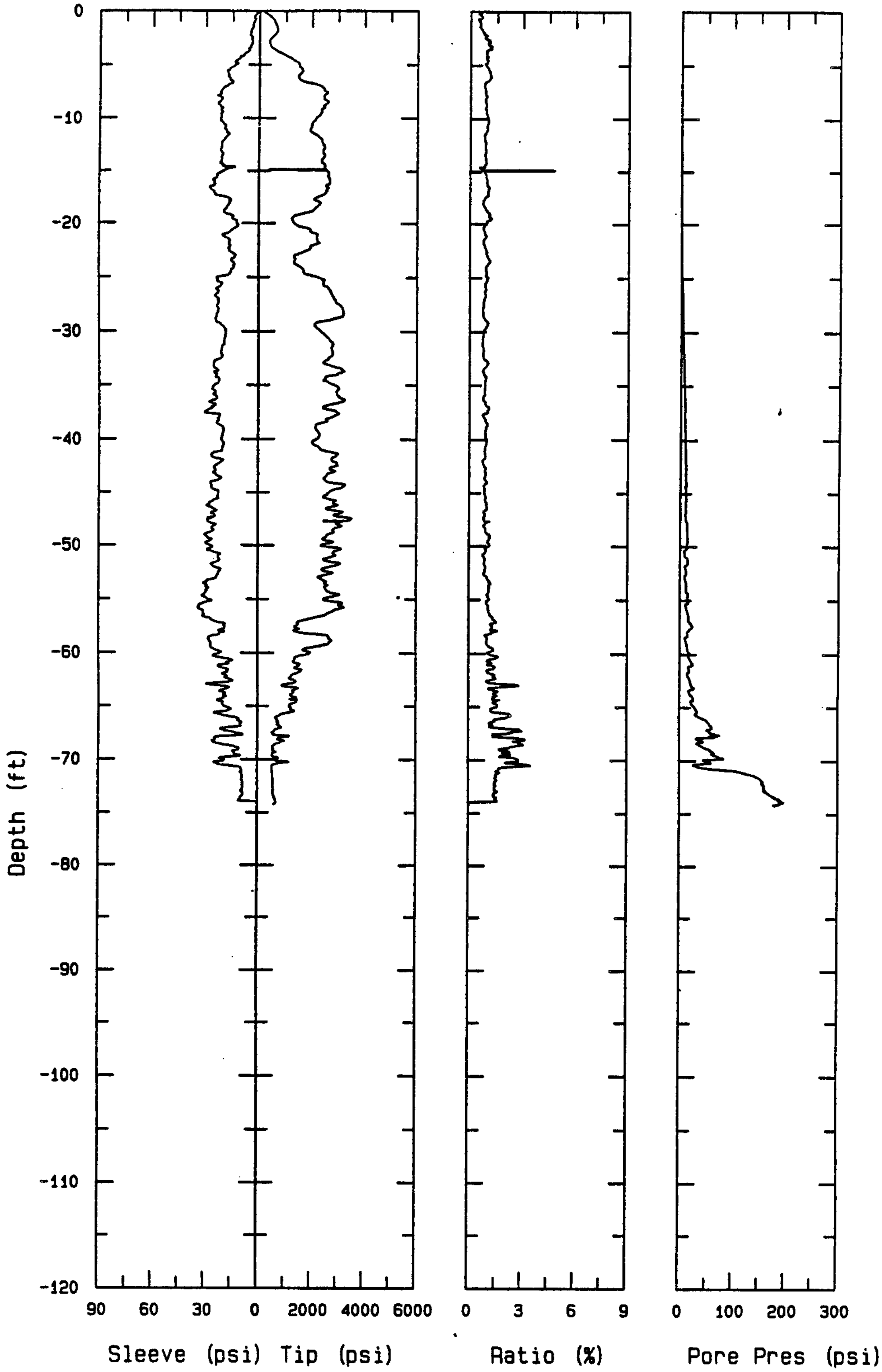

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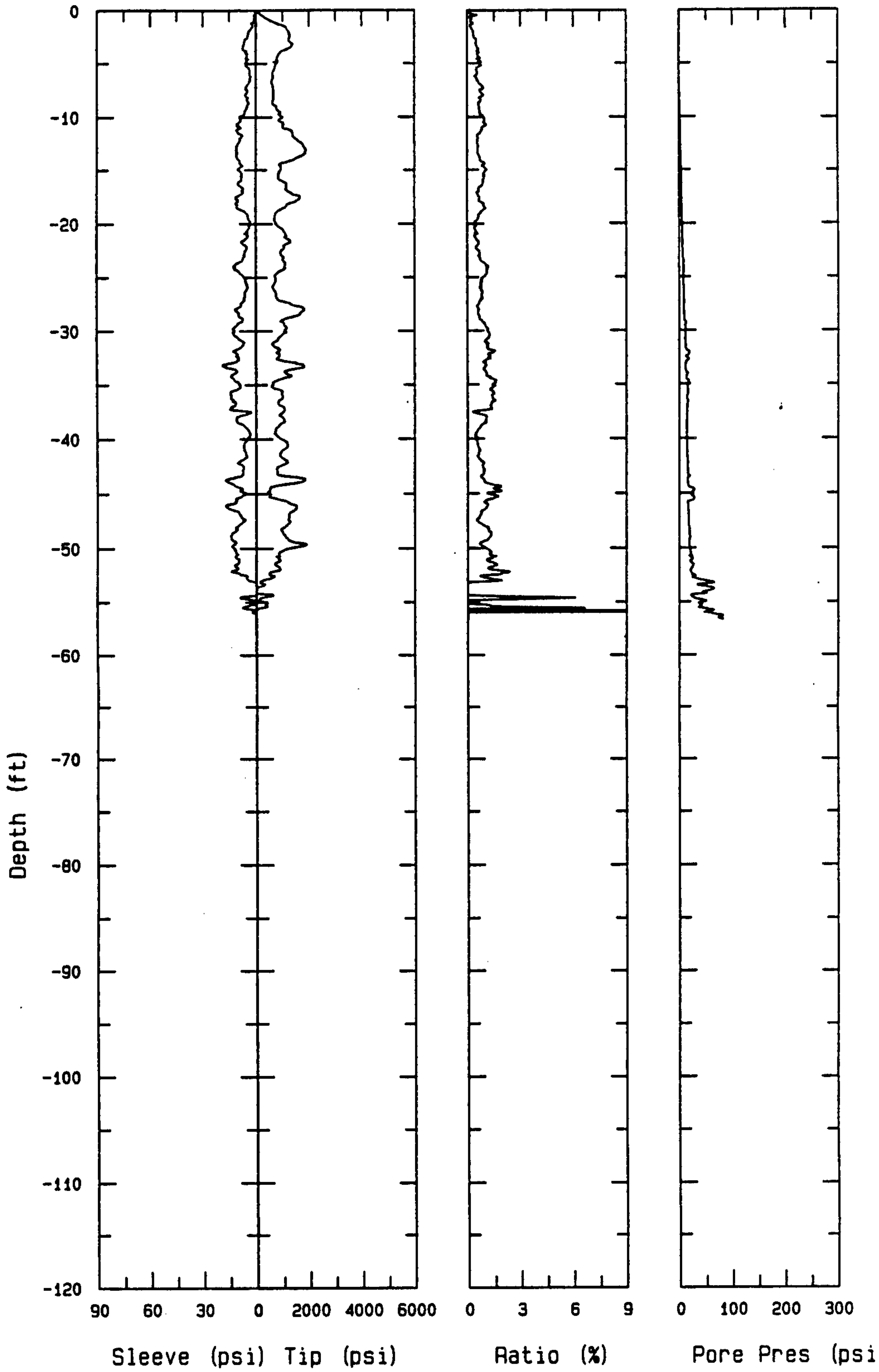

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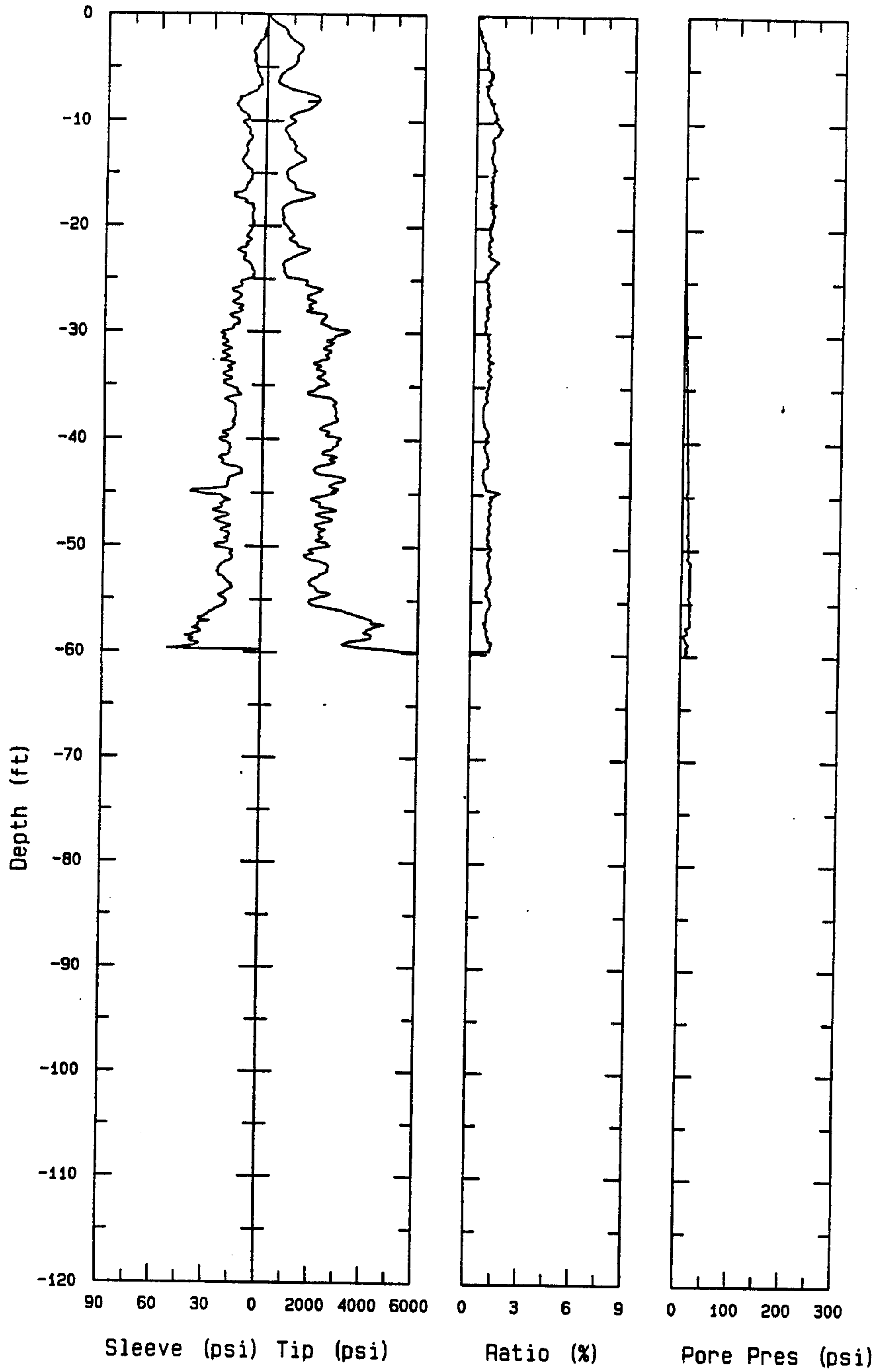

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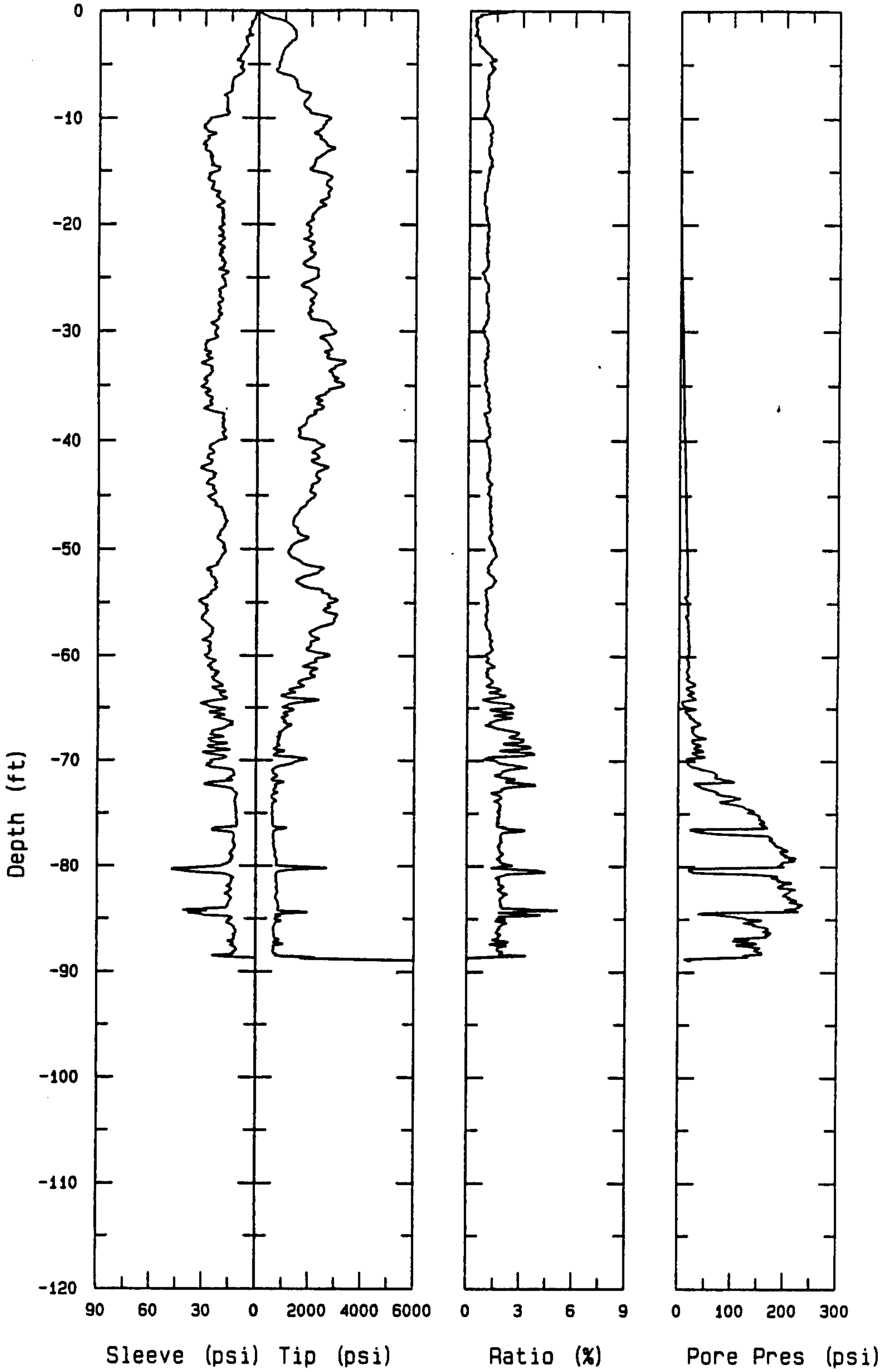

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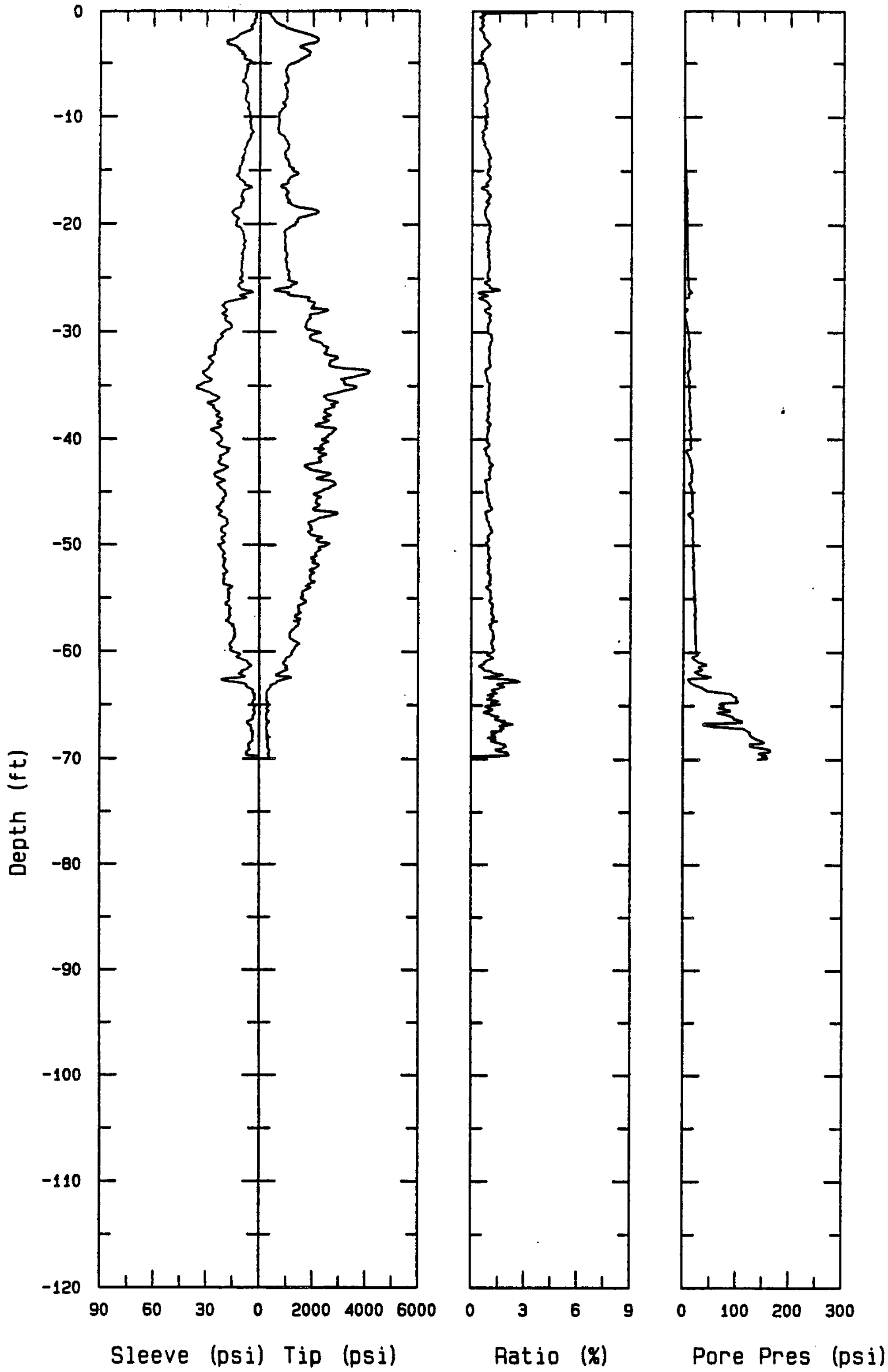

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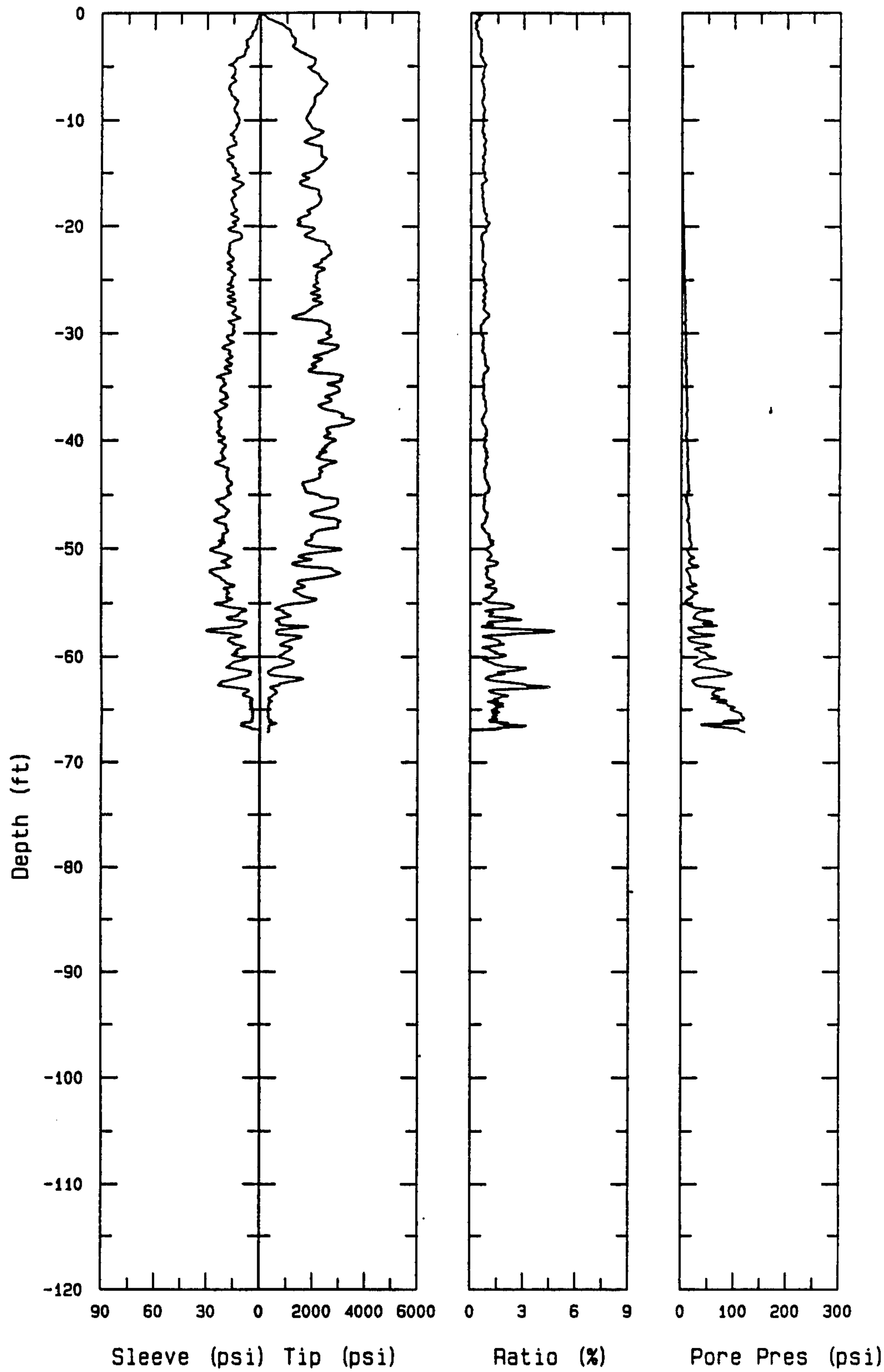

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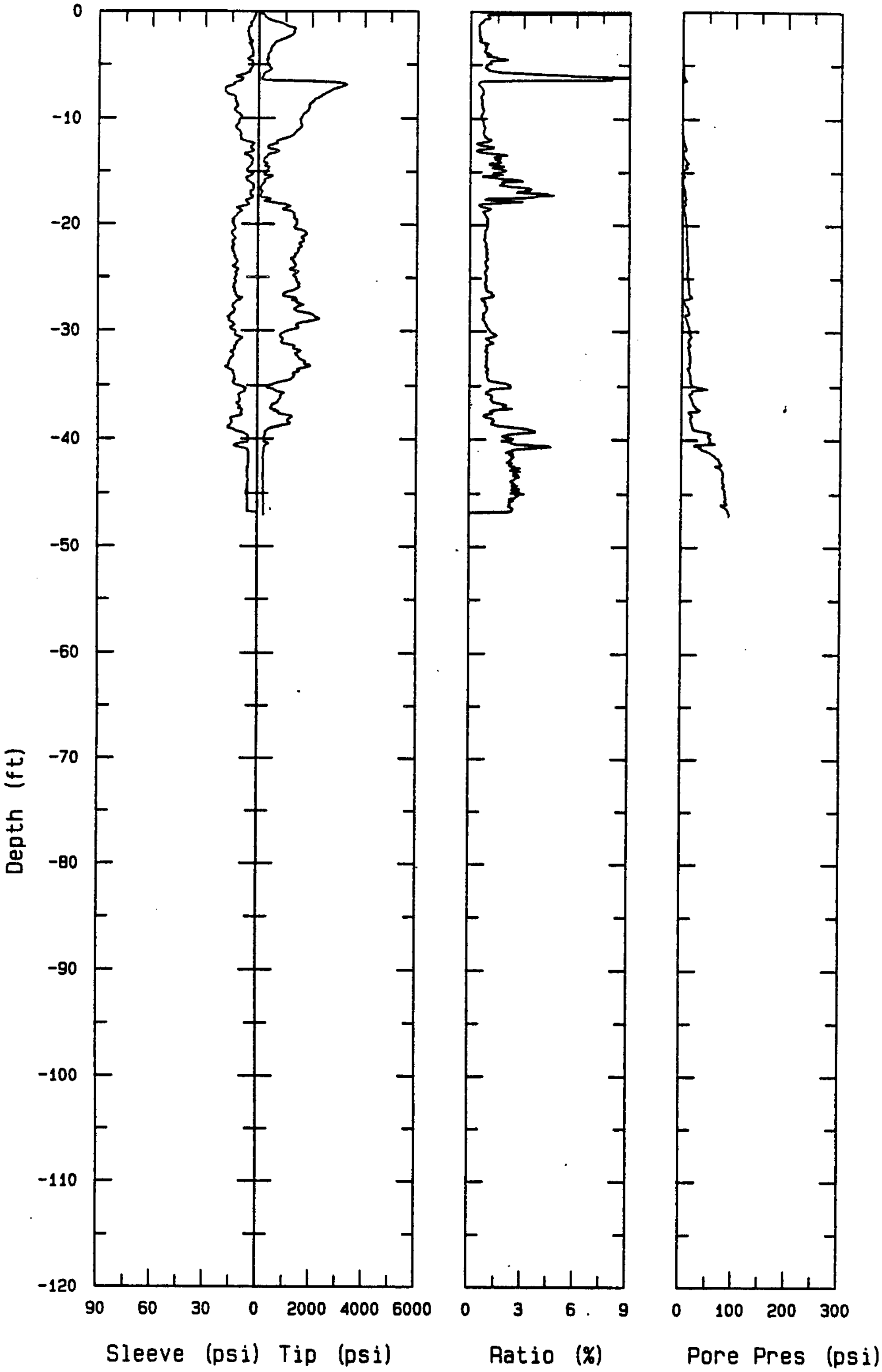

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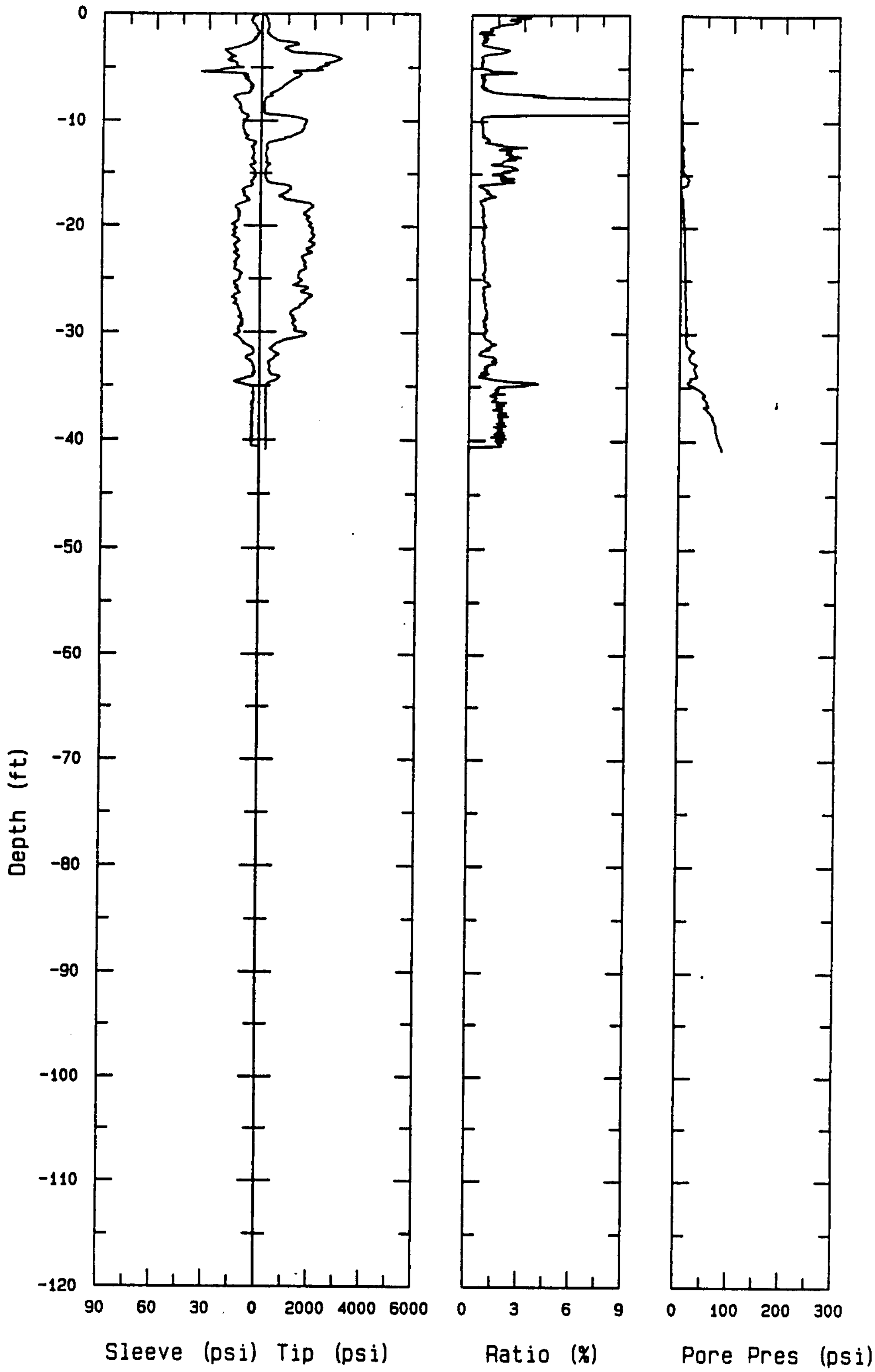

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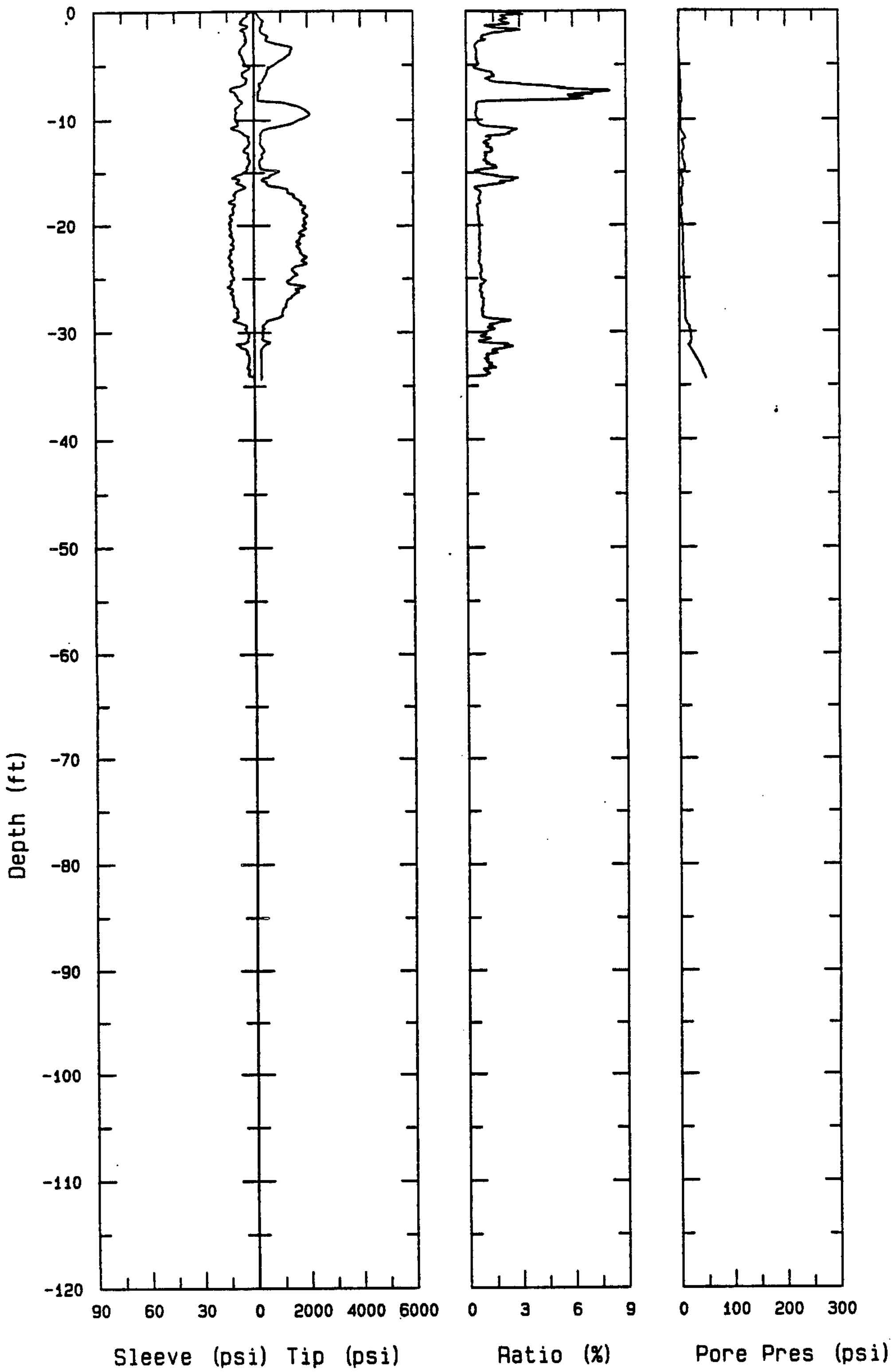

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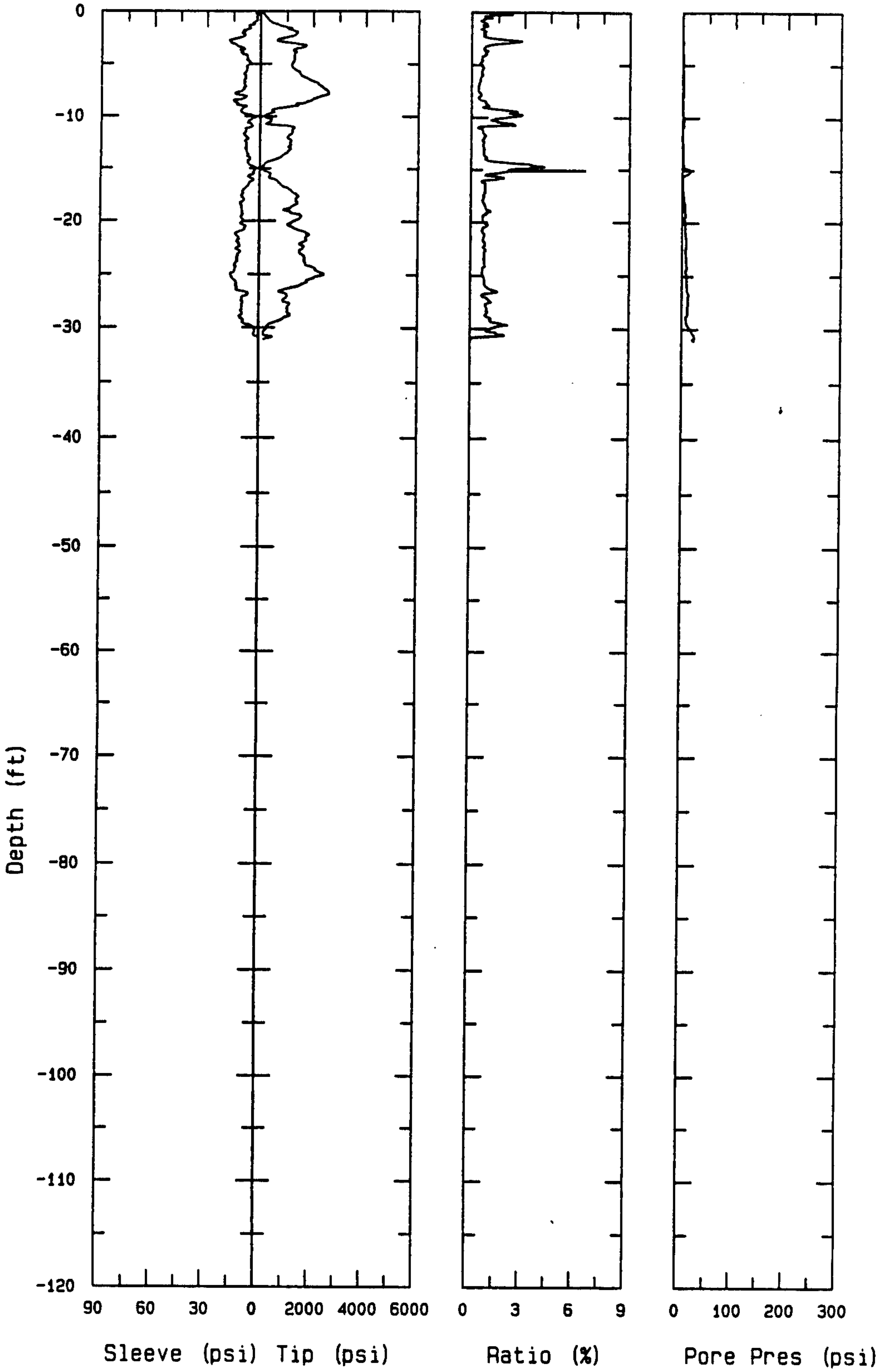

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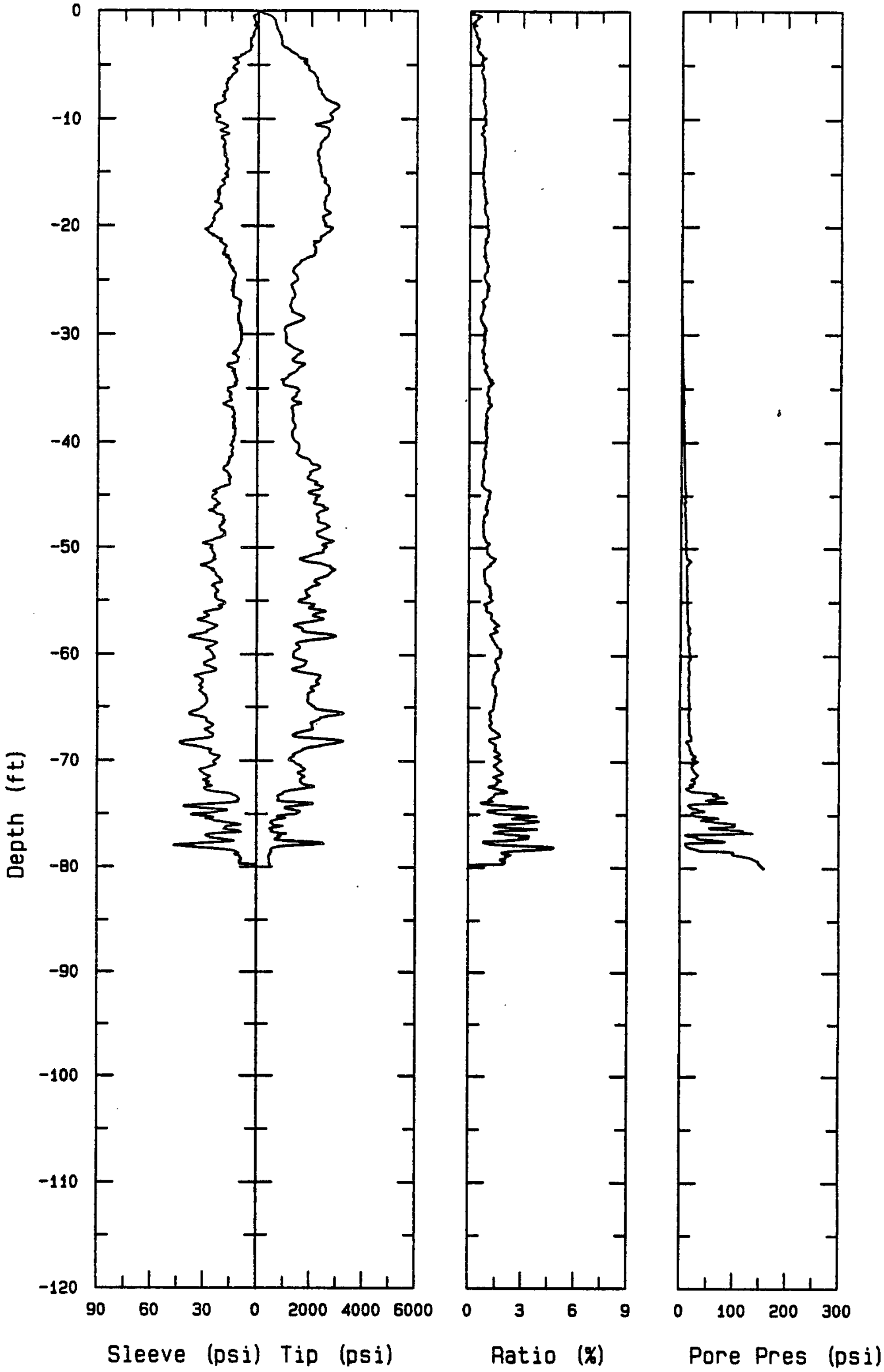

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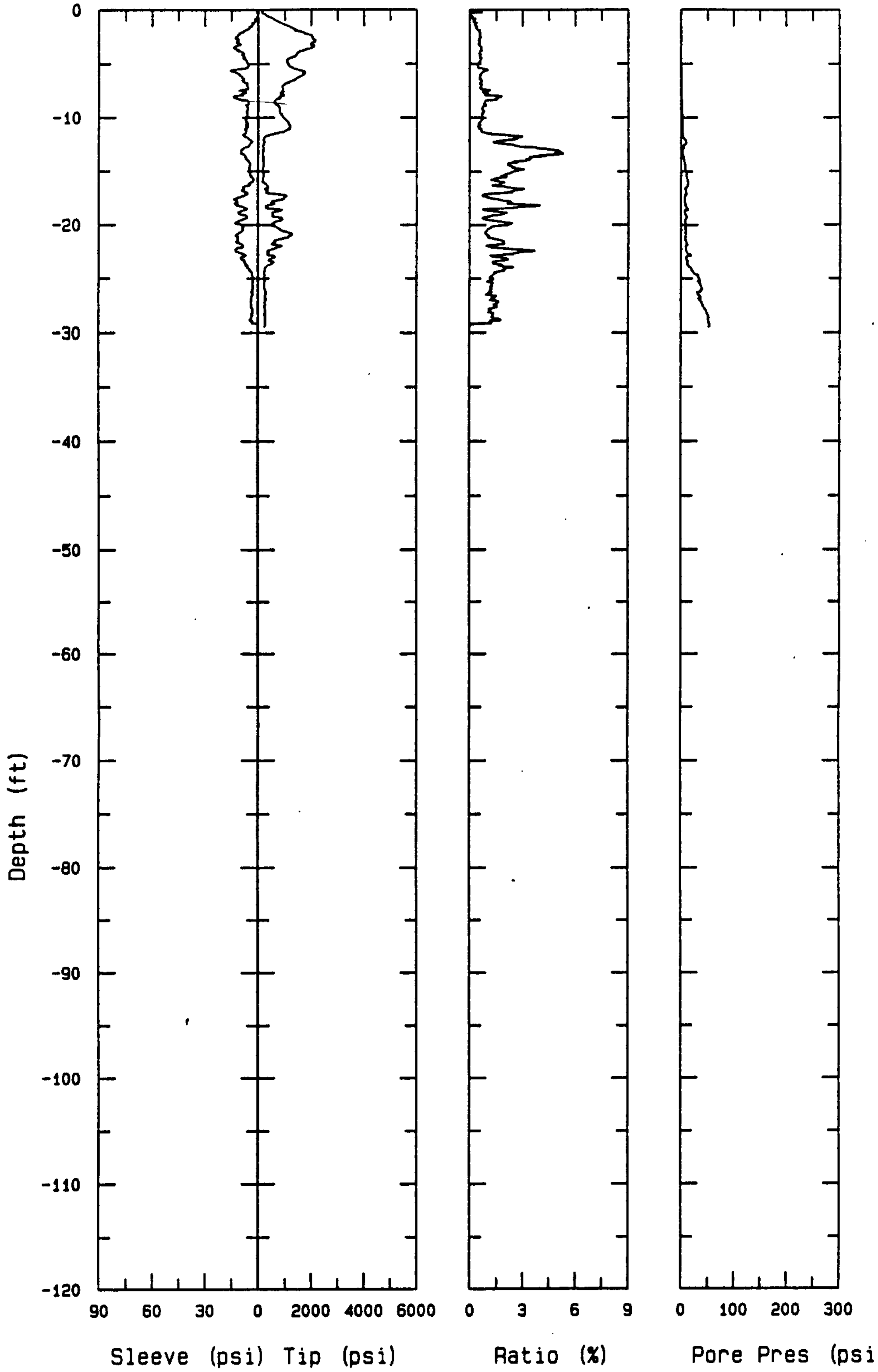

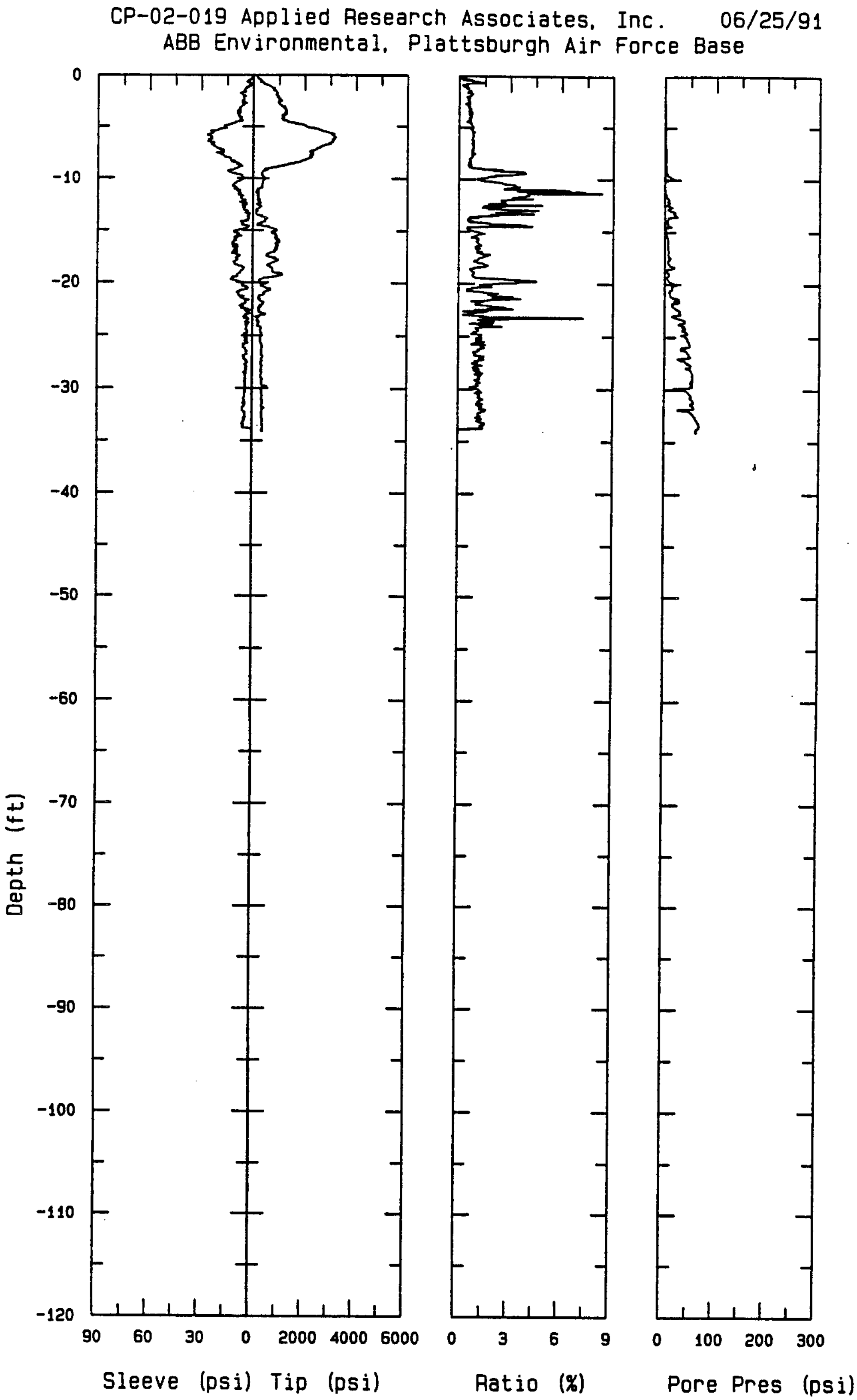
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-110
-120
90 60 30 0 2000 4000 6000
Sleeve (psi) Tip (psi)
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Ratio (%)
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Pore Pres (psi)

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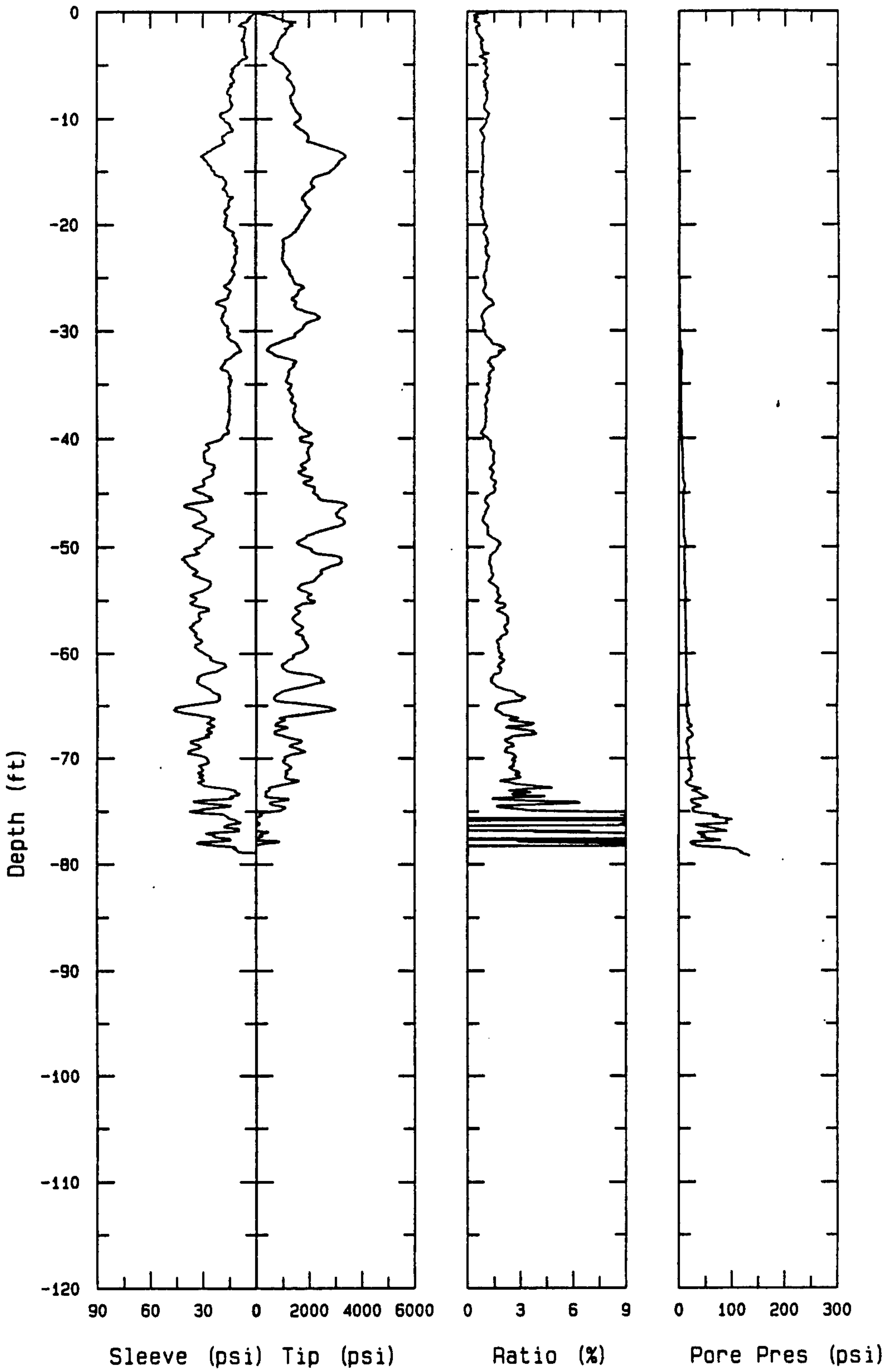

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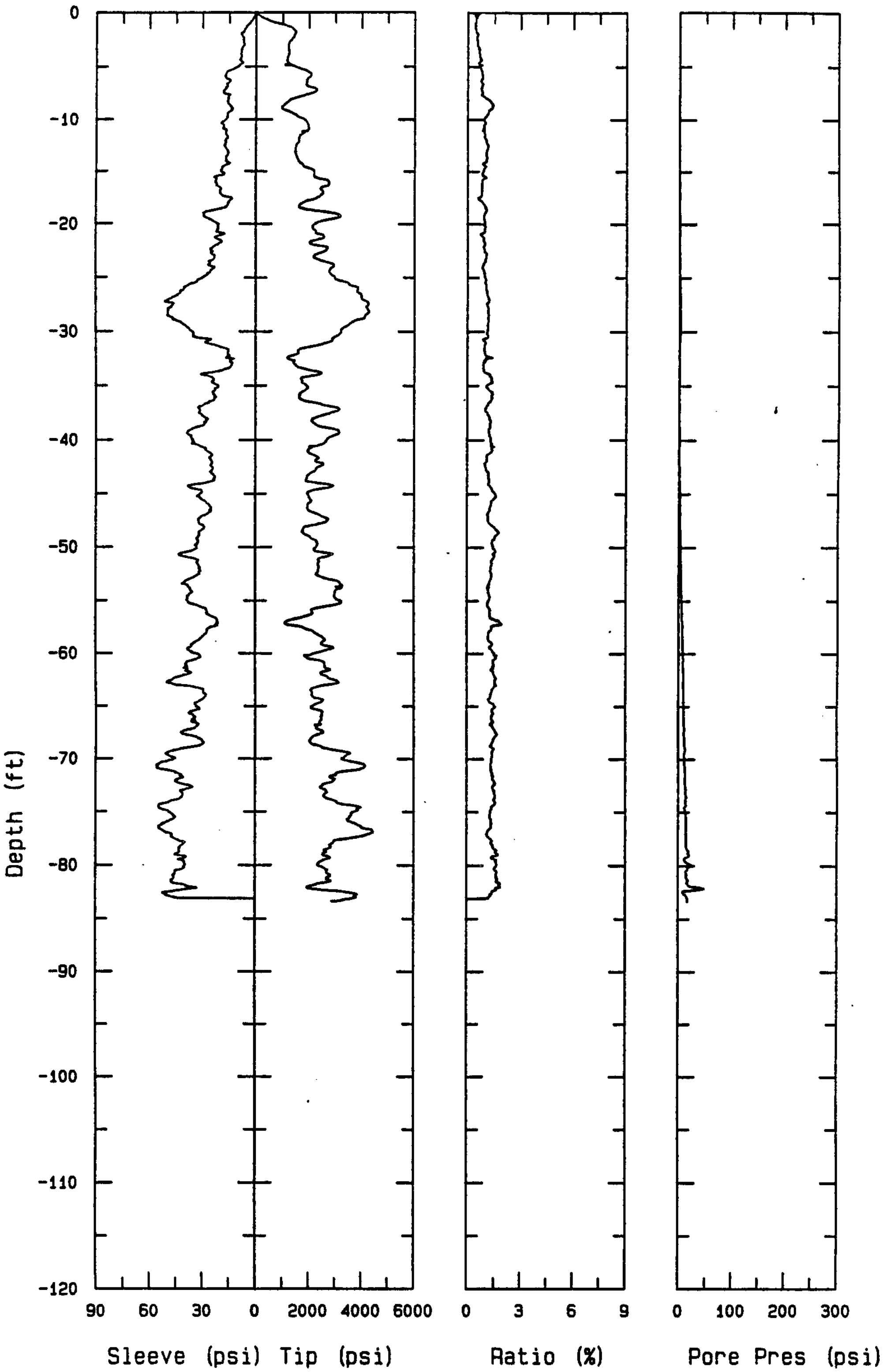

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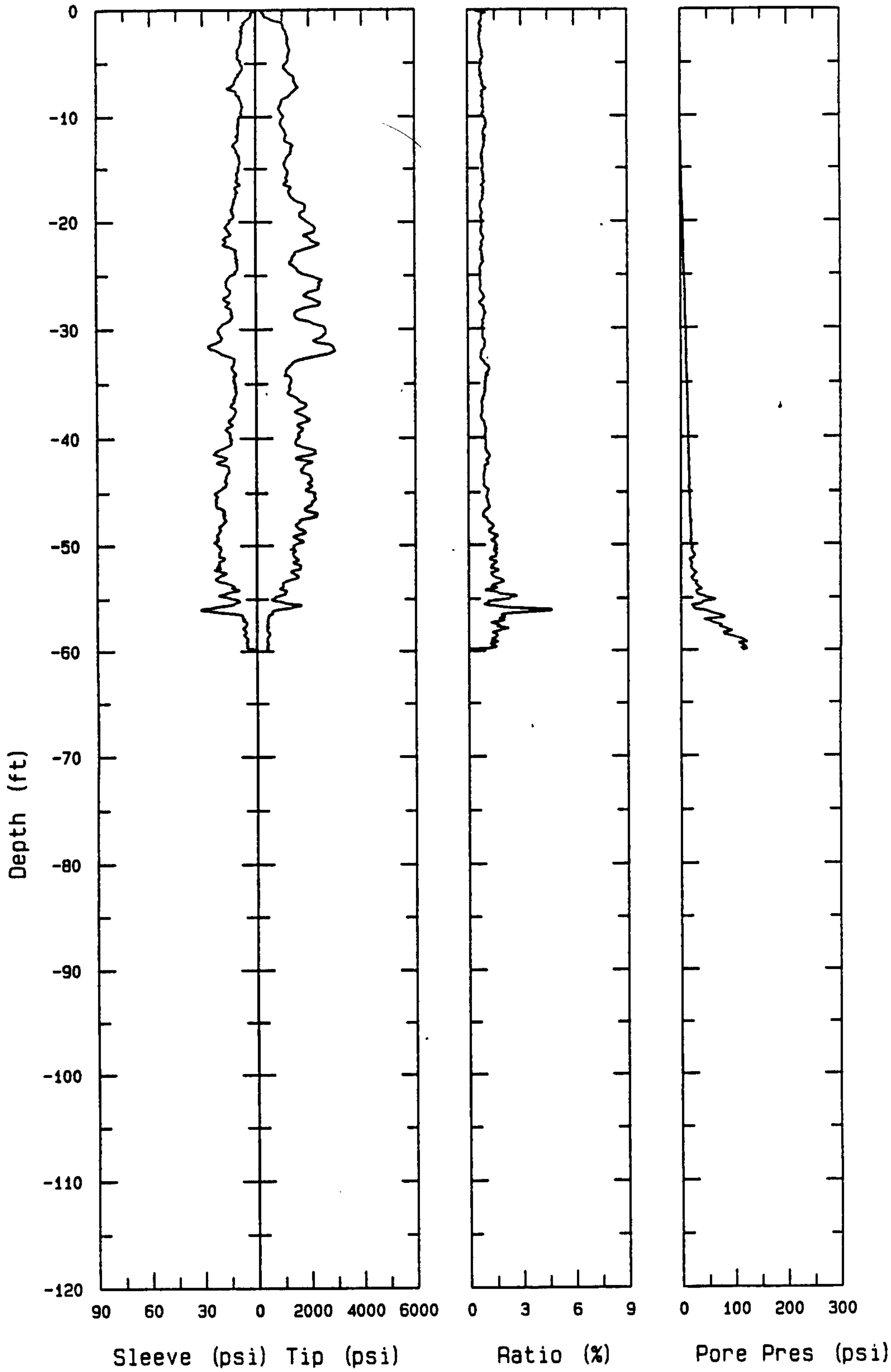

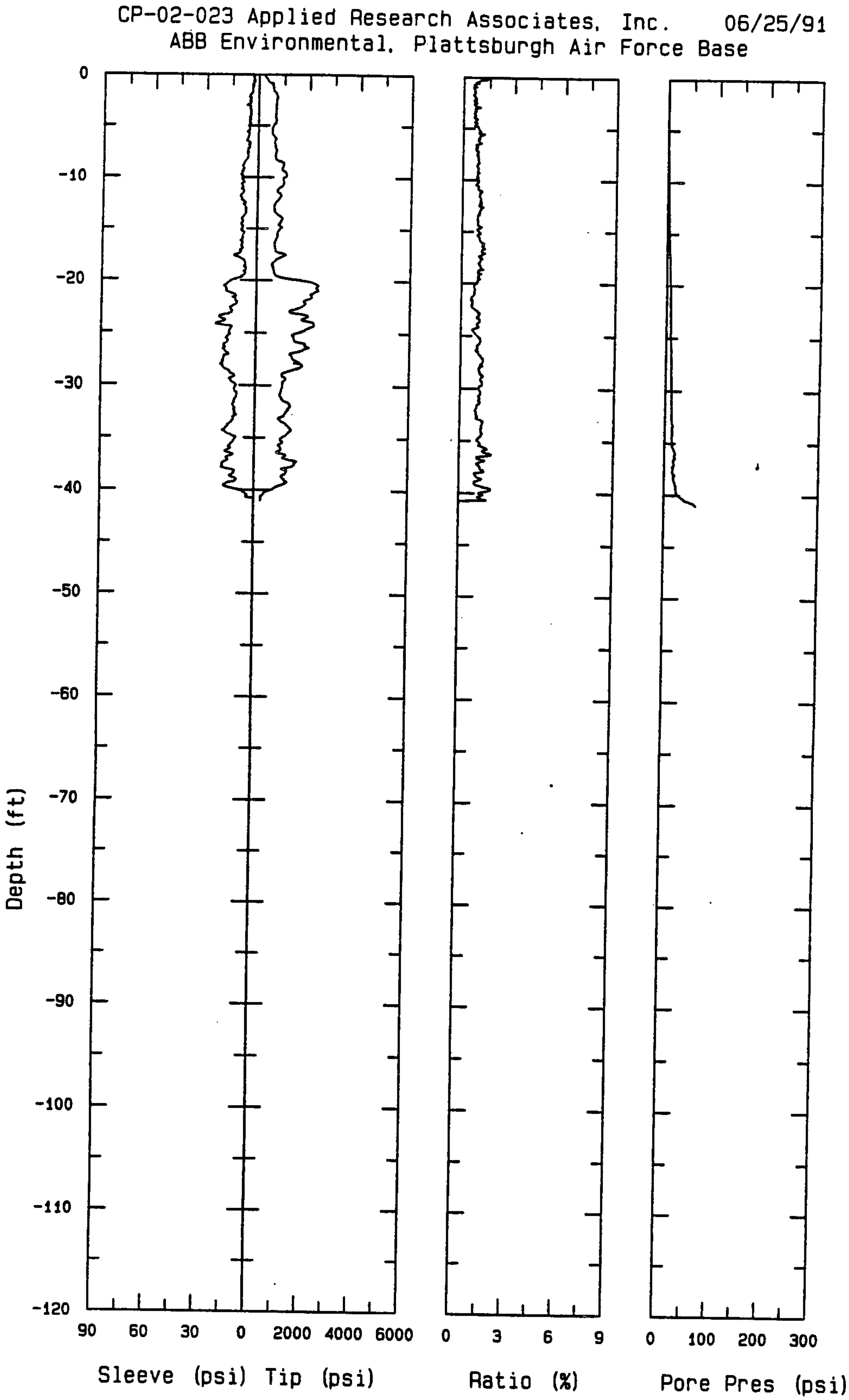
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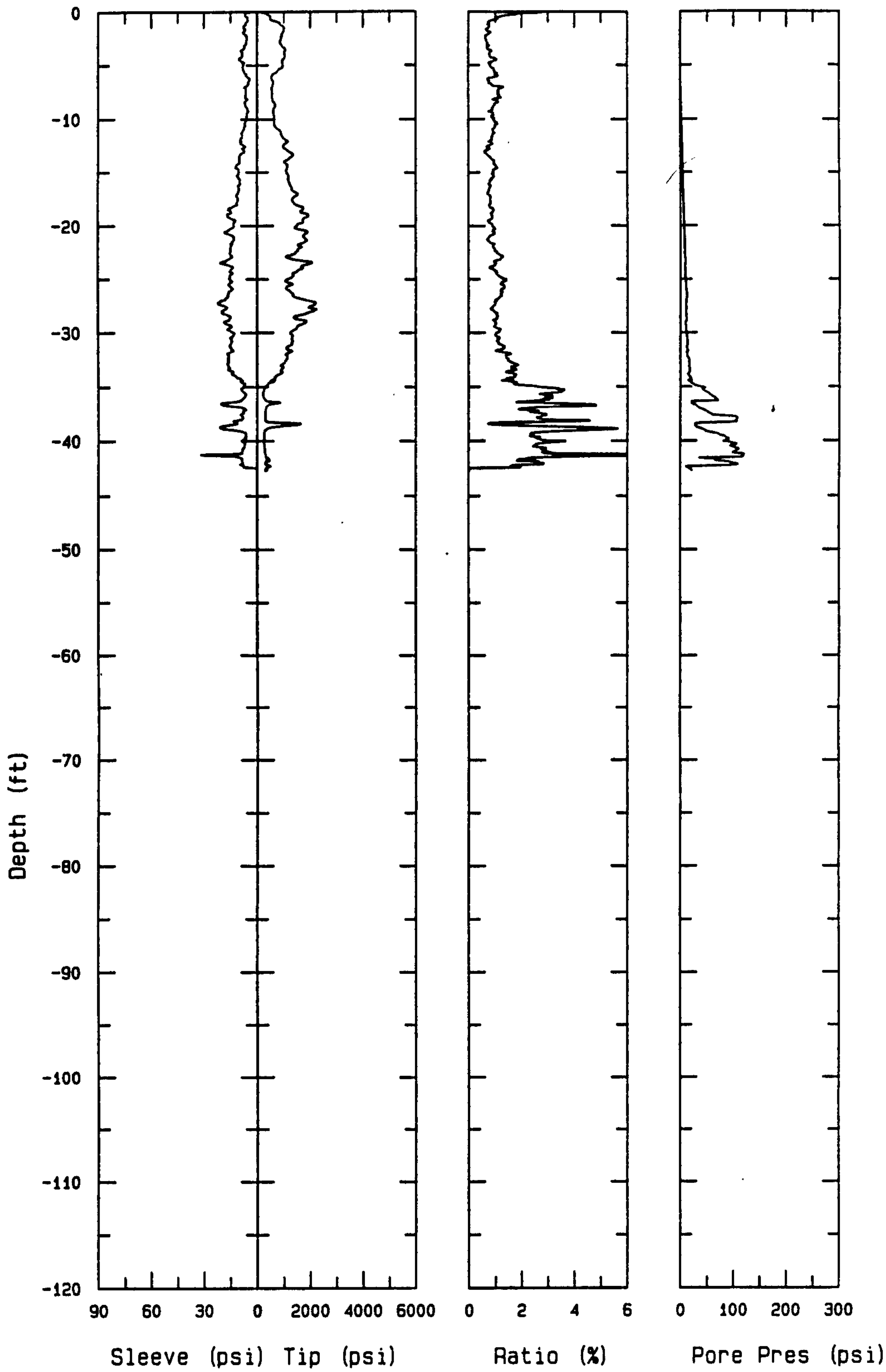

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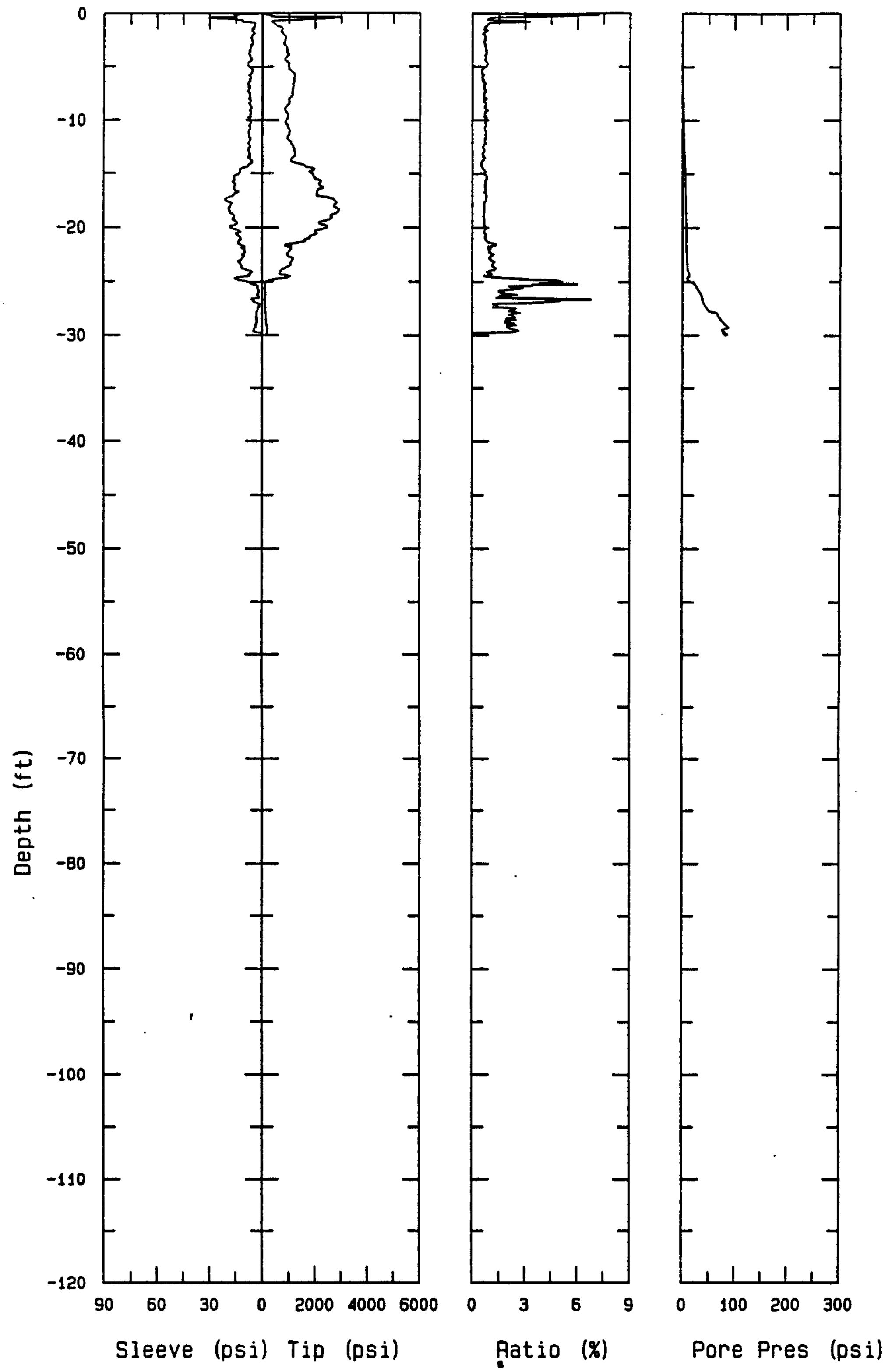

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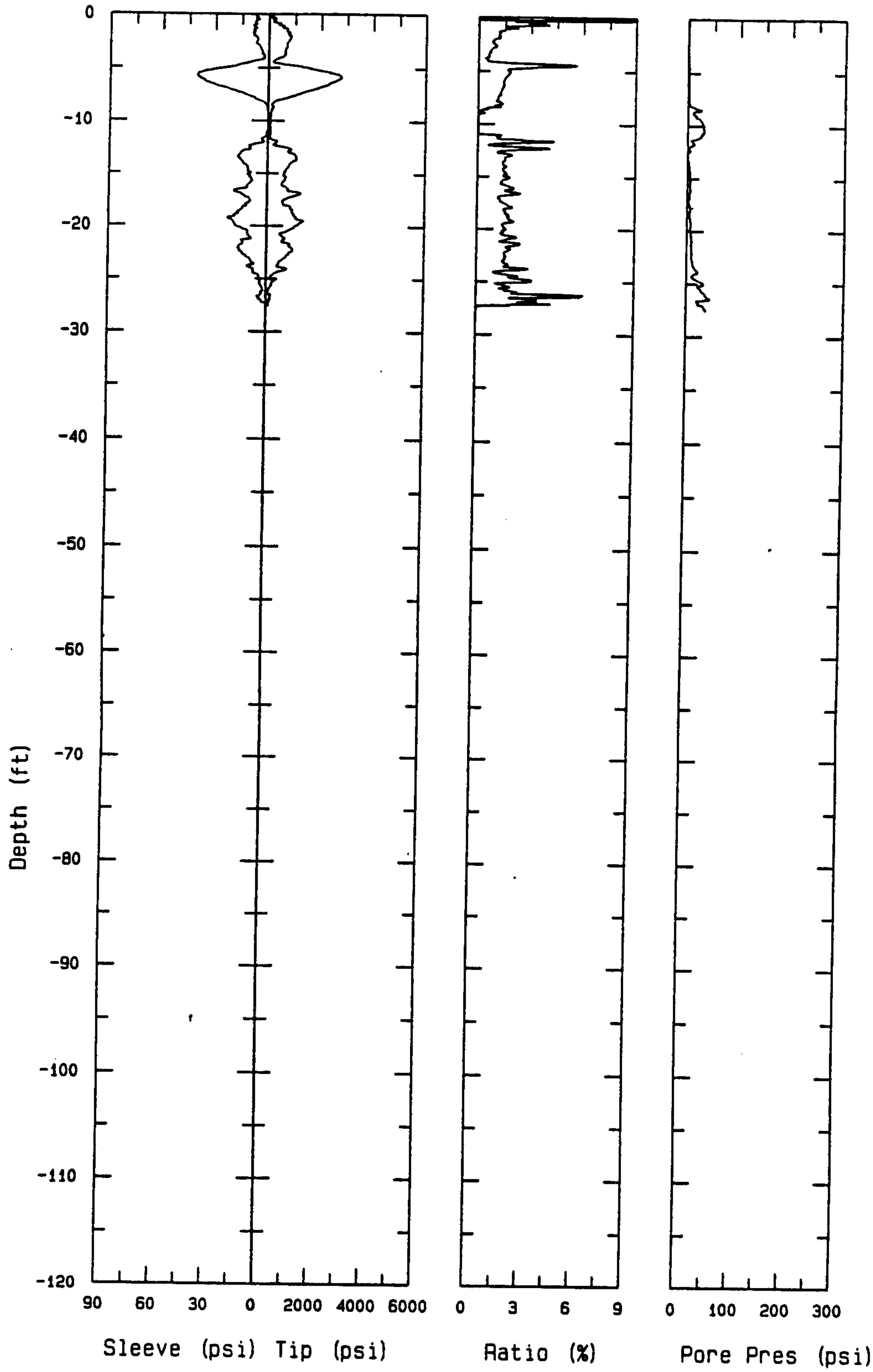

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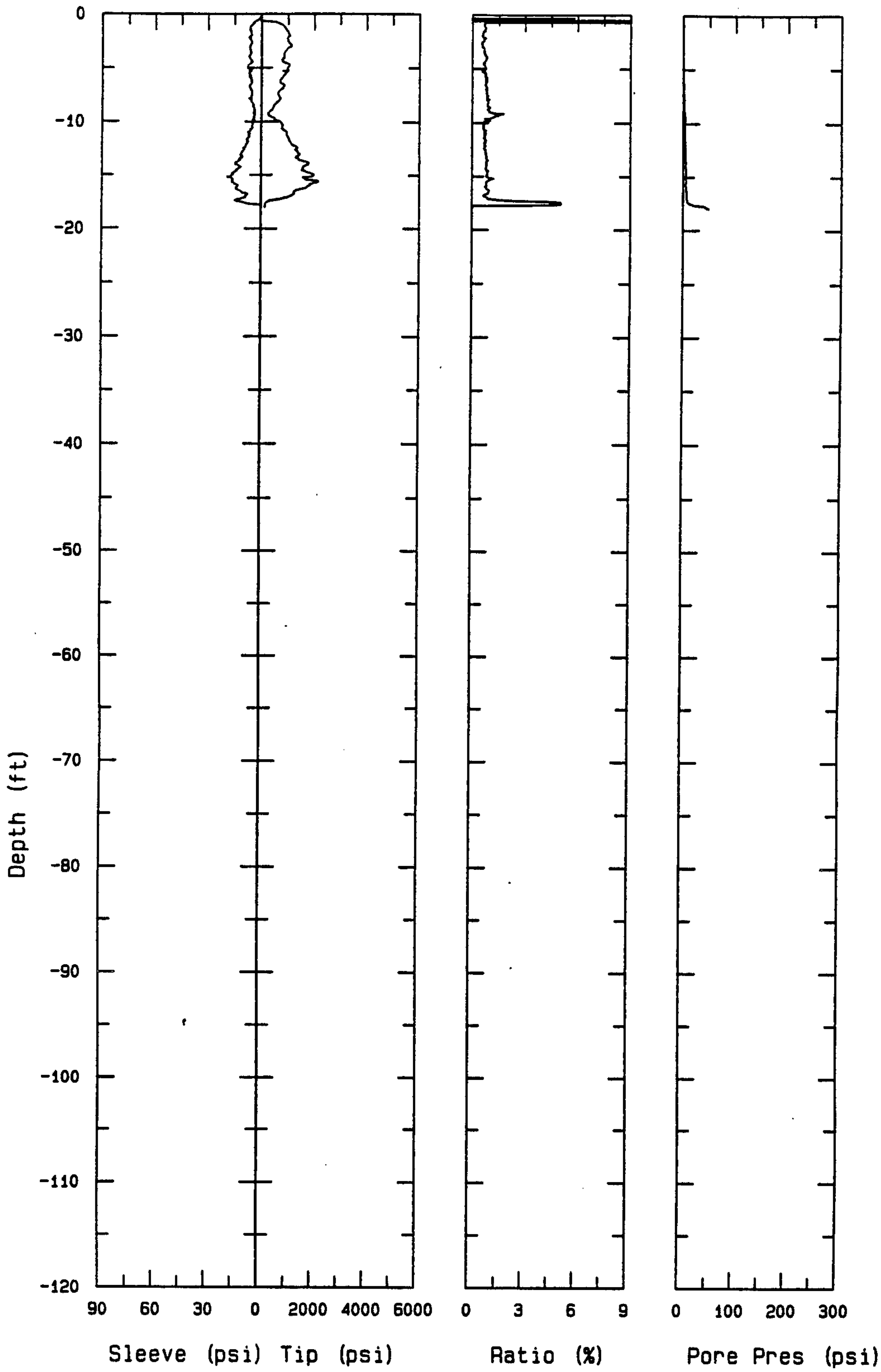

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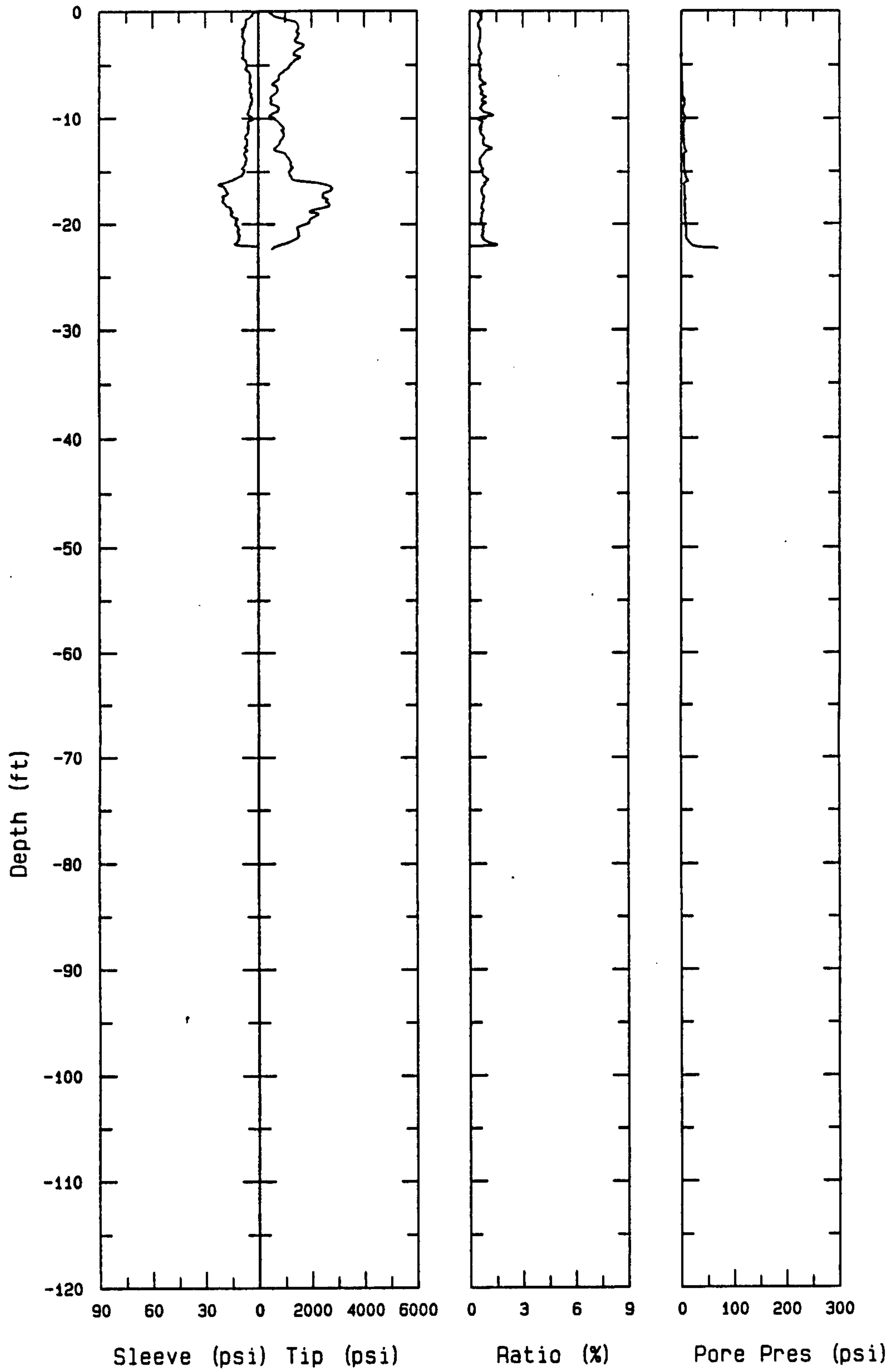

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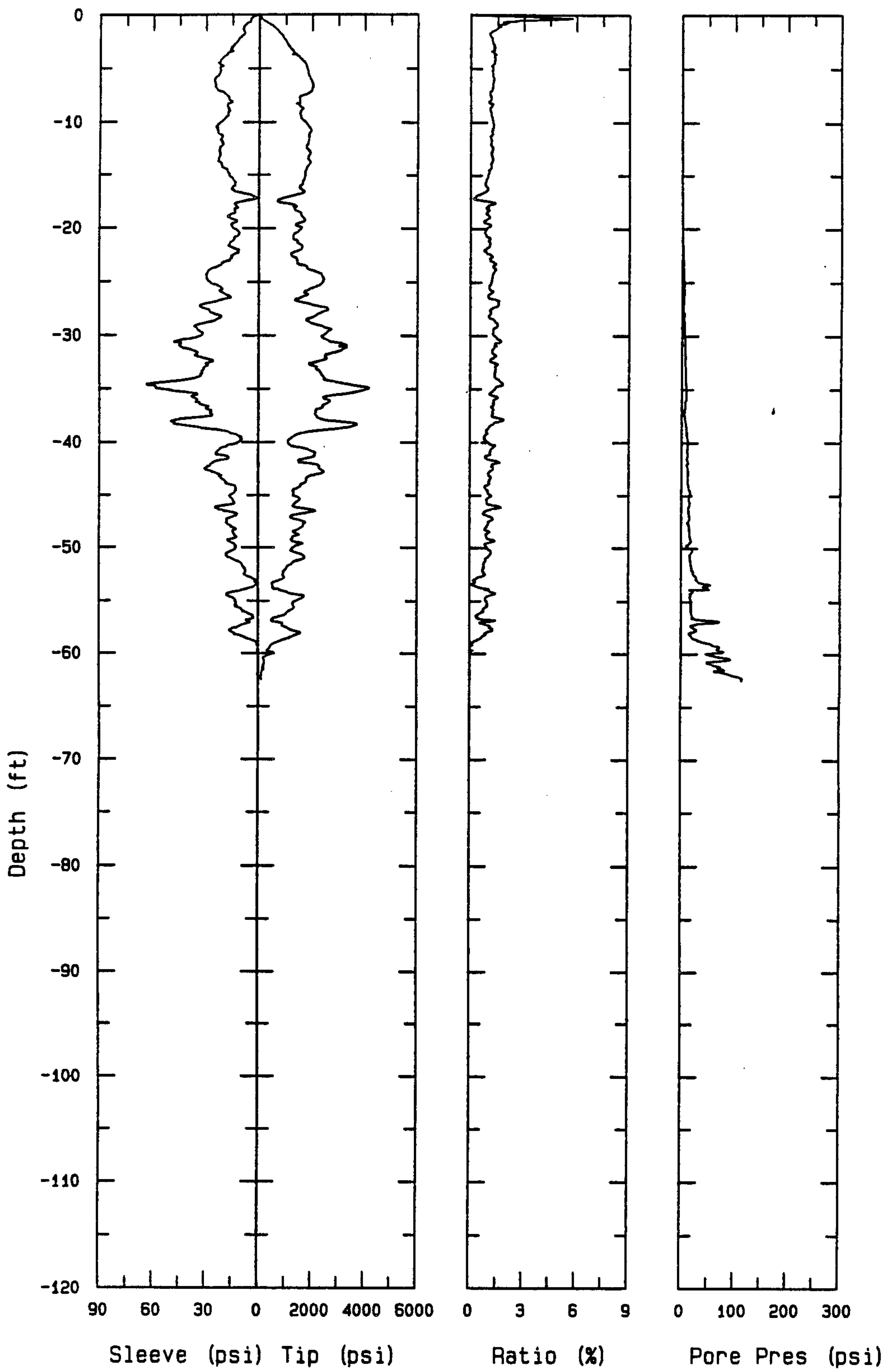

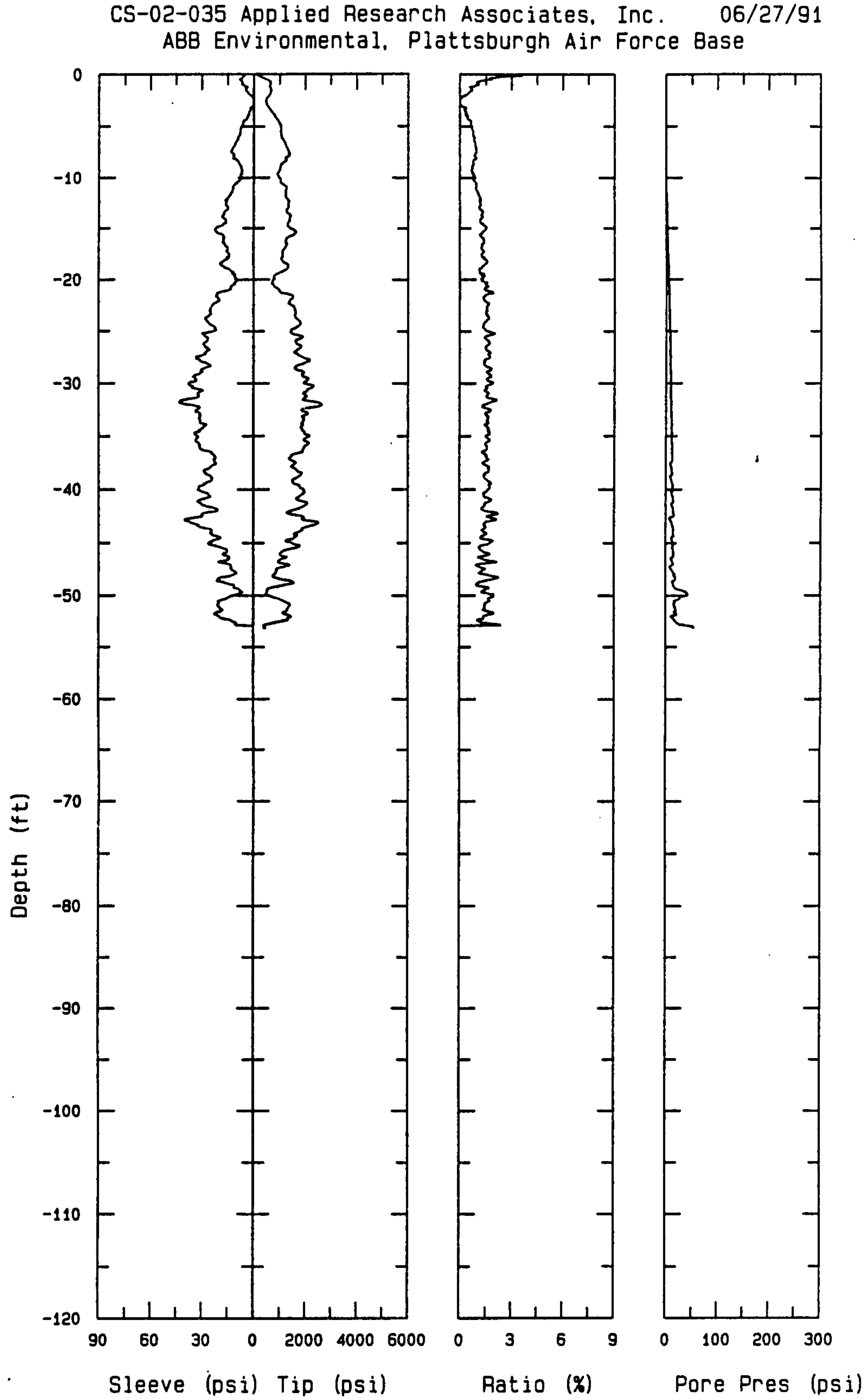
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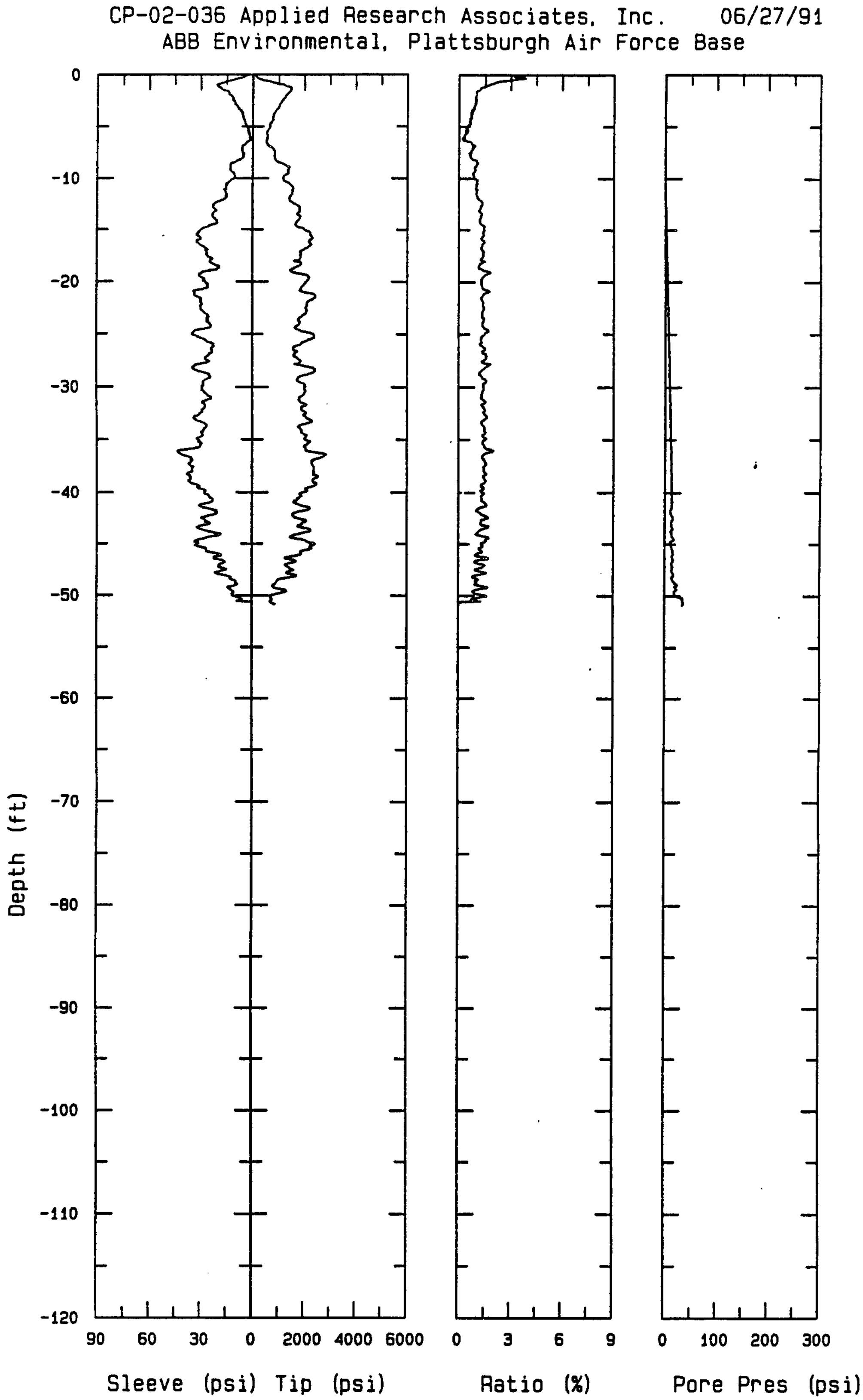
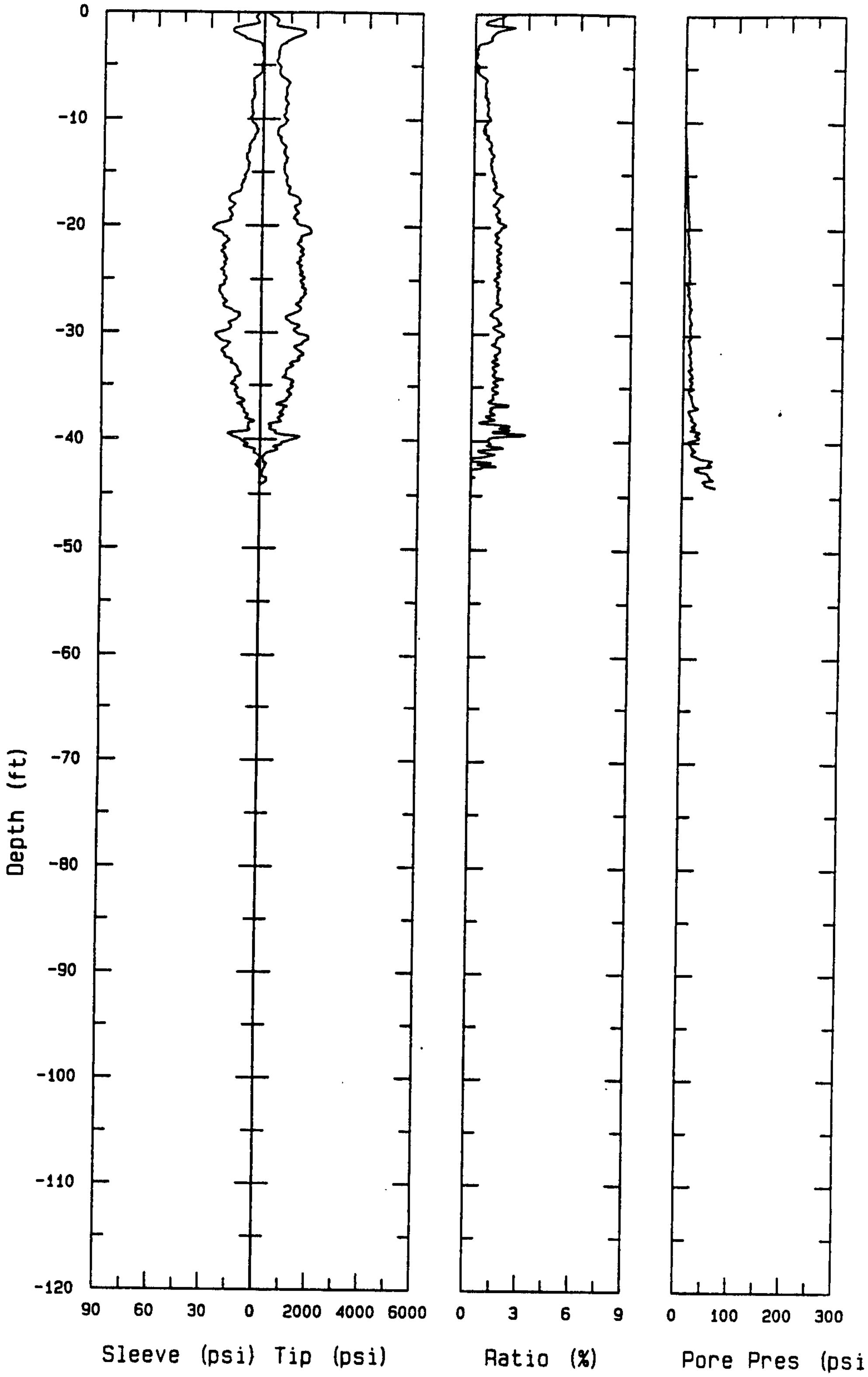
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
90 60 30 0 2000 4000 6000
0 3 6 9
0 100 200 300
Sleeve (psi) Tip (psi)
Ratio (%)
Pore Pres (psi)


CP-02-036 Applied Research Associates, Inc. 06/27/91
ABB Environmental, Plattsburgh Air Force Base
Depth (ft)
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
90 60 30 0 2000 4000 6000
0 3 6 9
0 100 200 300
Sleeve (psi) Tip (psi)
Ratio (%)
Pore Pres (psi)

CP-02-037 Applied Research Associates, Inc. 06/27/91
ABB Environmental, Plattsburgh Air Force Base



PLATTSBURG AFB, SCREENING DATA 1991
ALL SITES - HITS ONLY
GC FIELD SCREENING RESULTS
(WATER: $\mu g/L$)

| CPT LOCATION | SAMPLE ID | DEPTH (FT) | MATRIX | COMPOUND | CONCENTRATION | DILUTION | QUAL |
|---|---|---|---|---|---|---|---|
| CP-02-001 | 02CW00105001XF | 50 | Water | Toluene | 1.4 | 1.0 | J5 |
| CP-02-001 | 02CW00105501XF | 55 | Water | Trichloroethene | 1.3 | 1.0 | J5 |
| CP-02-002 | 02CW00202001XF | 20 | Water | Trichloroethene | 47 | 10.0 | J5 |
| CP-02-002 | 02CW00203701XF | 37 | Water | | ND | 1.0 | |
| CP-02-002 | 02CW00205201XF | 52 | Water | C-1,2-Dichloroethene | 1.1 | 1.0 | |
| CP-02-002 | | 52 | | Trichloroethene | 21 | 1.0 | |
| CP-02-002 | 02CW00205801XF | 58 | Water | | ND | 1.0 | |
| CP-02-003 | 02CW00302301XF | 23 | Water | Benzene | 2.0 | 1.0 | J5 |
| CP-02-003 | | 23 | | Ethylbenzene | 1.4 | 1.0 | J5 |
| CP-02-003 | | 23 | Water | C-1,2-Dichloroethene | 120 | 10.0 | |
| CP-02-003 | 02CW00303201XF | 32 | Water | C-1,2-Dichloroethene | 210 | 10.0 | |
| CP-02-003 | | 32 | | Benzene | 15 | 10.0 | J5 |
| CP-02-003 | | 32 | | Ethylbenzene | 15 | 10.0 | J5 |
| CP-02-003 | 02CW00304101XF | 41 | Water | C-1,2-Dichloroethene | 160 | 33.0 | J5 |
| CP-02-003 | | 41 | | Ethylbenzene | 66 | 33.0 | J5 |
| CP-02-003 | 02CW00305501XF | 55 | Water | C-1,2-Dichloroethene | 84 | 10.0 | |
| CP-02-003 | | 55 | | Ethylbenzene | 16 | 10.0 | J5 |
| CP-02-003 | 02CW00306701XF | 67 | Water | C-1,2-Dichloroethene | 1.2 | 1.0 | J5 |
| CP-02-004 | 02CW00403001XF | 30 | Water | Trichloroethene | 1.0 | 1.0 | J5 |
| CP-02-004 | 02CW00404601XF | 46 | Water | Trichloroethene | 20 | 1.0 | |
| CP-02-004 | 02CW00405601XF | 56 | Water | | ND | 1.0 | |
| CP-02-004 | 02CW00406401XF | 64 | Water | | ND | 1.0 | |
| CP-02-005 | 02CW00501701XF | 17 | Water | Trichloroethene | 6.6 | 1.0 | |
| CP-02-005 | 02CW00502801XF | 28 | Water | | ND | 1.0 | |
| CP-02-005 | 02CW00504201XF | 42 | Water | | ND | 1.0 | |
| CP-02-005 | 02CW00504601XF | 46 | Water | | ND | 1.0 | |
| CP-02-005 | 02CW00505001XF | 50 | Water | | ND | 1.0 | |
| CP-02-006 | 02CW00601501XF | 15 | Water | Trichloroethene | 630 | 20.0 | E |
| CP-02-006 | 02CW00602401XF | 24 | Water | C-1,2-Dichloroethene | 180 | 100.0 | J1 |
| CP-02-006 | | 24 | | Trichloroethene | 3,400 | 100.0 | E |
| CP-02-006 | 02CW00603301XF | 33 | Water | C-1,2-Dichloroethene | 850 | 100.0 | J1 |
| CP-02-006 | | 33 | | Trichloroethene | 3,500 | 100.0 | E |
| CP-02-006 | 02CW00604401XF | 44 | Water | Trichloroethene | 430 | 50.0 | |
| CP-02-006 | 02CW00605501XF | 55 | Water | C-1,2-Dichloroethene | 11 | 10.0 | J1 |
| CP-02-006 | | 55 | | Trichloroethene | 330 | 10.0 | E |
| CP-02-006 | | 55 | | Tetrachloroethene | 11 | 10.0 | J5 |
| CP-02-007 | 02CW00702201XF | 22 | Water | Trichloroethene | 12 | 1.0 | |
| CP-02-007 | 02CW00703101XF | 31 | Water | Trichloroethene | 54 | 10.0 | |
| CP-02-007 | 02CW00704501XF | 45 | Water | C-1,2-Dichloroethene | 240 | 100.0 | J5 |
| CP-02-007 | | 45 | | Trichloroethene | 4,900 | 100.0 | E |
| CP-02-007 | 02CW00705601XF | 56 | Water | Trichloroethene | 26 | 1.0 | J9 |
| CP-02-008 | 02CW00802801XF | 28 | Water | C-1,2-Dichloroethene | 670 | 20.0 | E |
| CP-02-008 | | 28 | | Trichloroethene | 52 | 20.0 | J5 |
| CP-02-008 | 02CW00804301XF | 43 | Water | C-1,2-Dichloroethene | 2,000 | 50.0 | E |
| CP-02-008 | | 43 | | Trichloroethene | 1,500 | 50.0 | E |
| CP-02-008 | 02CW00805201XF | 52 | Water | C-1,2-Dichloroethene | 1,700 | 100.0 | |
| CP-02-008 | | 52 | | Trichloroethene | 3,200 | 100.0 | E |
| CP-02-008 | 02CW00805701XF | 57 | Water | C-1,2-Dichloroethene | 510 | 100.0 | |
| CP-02-008 | | 57 | | Trichloroethene | 3,300 | 100.0 | E |
| CP-02-008 | | 57 | | Benzene | 240 | 100.0 | J5 |
| CP-02-008 | 02CW00807001XF | 70 | Water | | ND | 1.0 | |

PLATTSBURG AFB, SCREENING DATA 1991
ALL SITES - HITS ONLY
GC FIELD SCREENING RESULTS
(WATER: $\mu$g/L)

| PCPT LOCATION | SAMPLE ID | DEPTH (FT) | MATRIX | COMPOUND | CONCENTRATION | DILUTION | QUAL |
|---|---|---|---|---|---|---|---|
| CP-02-009 | 02CW00901601XF | 16 | Water | C-1,2-Dichloroethene | 14 | 1.0 | |
| CP-02-009 | 02CW00902801XF | 28 | Water | C-1,2-Dichloroethene | 19 | 1.0 | |
| CP-02-009 | 02CW00903501XF | 35 | Water | Benzene | 2.8 | 2.0 | J5 |
| CP-02-009 | | 35 | | C-1,2-Dichloroethene | 700 | 20.0 | E |
| CP-02-009 | 02CW00904401XF | 44 | Water | C-1,2-Dichloroethene | 10,000 | 1000.0 | |
| CP-02-009 | 02CW00905401XF | 54 | Water | C-1,2-Dichloroethene | 790 | 100.0 | |
| CP-02-009 | 02CW00906001XF | 60 | Water | C-1,2-Dichloroethene | 20 | 10.0 | J5 |
| CP-02-010 | 02CW01003001XF | 30 | Water | Trichloroethene | 5.3 | 1.0 | |
| CP-02-010 | 02CW01004601XF | 46 | Water | C-1,2-Dichloroethene | 19 | 1.0 | |
| CP-02-010 | | 46 | | Trichloroethene | 5.5 | 1.0 | |
| CP-02-010 | 02CW01005401XF | 54 | Water | | ND | 1.0 | |
| CP-02-011 | 02CW01103501XF | 35 | Water | Trichloroethene | 1.4 | 1.0 | J5 |
| CP-02-011 | 02CW01104801XF | 48 | Water | C-1,2-Dichloroethene | 17 | 1.0 | |
| CP-02-011 | | 48 | | Trichloroethene | 6.2 | 1.0 | |
| CP-02-012 | 02CW01201501XF | 15 | Water | C-1,2-Dichloroethene | 42 | 10.0 | J5 |
| CP-02-012 | | 15 | | Trichloroethene | 19 | 10.0 | J5 |
| CP-02-012 | 02CW01202501XF | 25 | Water | C-1,2-Dichloroethene | 2,100 | 100.0 | |
| CP-02-012 | | 25 | | Trichloroethene | 1,500 | 100.0 | |
| CP-02-012 | 02CW01203401XF | 34 | Water | C-1,2-Dichloroethene | 8.7 | 2.0 | J5 |
| CP-02-012 | | 34 | | Trichloroethene | 6.4 | 2.0 | J5 |
| CP-02-013 | 02CW01301001XF | 18 | Water | | ND | 1.0 | |
| CP-02-013 | 02CW01302001XF | 20 | Water | Trichloroethene | 190 | 20.0 | |
| CP-02-013 | 02CW01302801XF | 28 | Water | C-1,2-Dichloroethene | 3.7 | 2.0 | J5 |
| CP-02-013 | | 28 | | Trichloroethene | 8.4 | 2.0 | J5 |
| CP-02-014 | 02CW01401001XF | 10 | Water | | ND | 1.0 | |
| CP-02-014 | 02CW01402201XF | 22 | Water | Trichloroethene | 150 | 10.0 | |
| CP-02-015 | 02CW01500801XF | 8 | Water | Trichloroethene | 1.8 | 1.0 | J5 |
| CP-02-015 | 02CW01501201XF | 12 | Water | | ND | 1.0 | |
| CP-02-015 | 02CW01502501XF | 25 | Water | C-1,2-Dichloroethene | 1.3 | 1.0 | J5 |
| CP-02-015 | | 25 | | Trichloroethene | 15 | 1.0 | |
| CP-02-016 | 02CW01601701XF | 17 | Water | | ND | 1.0 | |
| CP-02-016 | 02CW01603201XF | 32 | Water | | ND | 1.0 | |
| CP-02-017 | 02CW01703501XF | 35 | Water | | ND | 1.0 | |
| CP-02-017 | 02CW01704201XF | 42 | Water | | ND | 1.0 | |
| CP-02-017 | 02CW01705001XF | 50 | Water | | ND | 1.0 | |
| CP-02-017 | 02CW01705801XF | 58 | Water | | ND | 1.0 | |
| CP-02-018 | 02CW01801001XF | 10 | Water | Trichloroethene | 1.4 | 1.0 | J5 |
| CP-02-018 | 02CW01802001XF | 20 | Water | | ND | 1.0 | |
| CP-02-019 | 02CW01900901XF | 9 | Water | | ND | 1.0 | |
| CP-02-019 | 02CW01901901XF | 19 | Water | C-1,2-Dichloroethene | 16 | 1.0 | |
| CP-02-020 | 02CW02003501XF | 35 | Water | C-1,2-Dichloroethene | 290 | 20.0 | |
| CP-02-020 | 02CW02004601XF | 46 | Water | C-1,2-Dichloroethene | 27,000 | 500.0 | E |
| CP-02-020 | | 46 | | Trichloroethene | 500 | 500.0 | J5 |
| CP-02-020 | | 46 | | Toluene | 11,000 | 500.0 | J1 |
| CP-02-020 | | 46 | | m/p-Xylene | 1,100 | 500.0 | J5 |
| CP-02-020 | 02CW02005901XF | 59 | Water | C-1,2-Dichloroethene | 12 | 1.0 | |
| CP-02-020 | 02CW02007001XF | 70 | Water | C-1,2-Dichloroethene | 16 | 1.0 | |
| CP-02-020 | | 70 | | Toluene | 6.9 | 1.0 | J1 |
| CP-02-020 | | 70 | | Ethylbenzene | 1.2 | 1.0 | J5 |
| CP-02-020 | | 70 | | m/p-Xylene | 4.5 | 1.0 | J5 |
| CP-02-020 | | 70 | | o-Xylene | 1.5 | 1.0 | J5 |

PLATTSBURG AFB, SCREENING DATA 1991
ALL SITES - HITS ONLY
GC FIELD SCREENING RESULTS
(WATER: $\mu g/L$)

| PT LOCATION | SAMPLE ID | DEPTH (FT) | MATRIX | COMPOUND | CONCENTRATION | DILUTION | QUAL |
|---|---|---|---|---|---|---|---|
| CP-02-021 | 02CW02104601XF | 46 | Water | | ND | 1.0 | |
| CP-02-021 | 02CW02105301XF | 53 | Water | | ND | 1.0 | |
| CP-02-022 | 02CW02201801XF | 18 | Water | | ND | 1.0 | |
| CP-02-022 | 02CW02203201XF | 32 | Water | C-1,2-Dichloroethene | 5.8 | 1.0 | |
| CP-02-022 | 02CW02204101XF | 41 | Water | C-1,2-Dichloroethene | 11 | 1.0 | |
| CP-02-022 | 02CW02205101XF | 51 | Water | | ND | 1.0 | |
| CP-02-023 | 02CW02301201XF | 12 | Water | | ND | 1.0 | |
| CP-02-023 | 02CW02302201XF | 22 | Water | | ND | 1.0 | |
| CP-02-023 | 02CW02302801XF | 28 | Water | | ND | 1.0 | |
| CP-02-023 | 02CW02303701XF | 37 | Water | | ND | 1.0 | |
| CP-02-024 | 02CW02401001XF | 10 | Water | | ND | 1.0 | |
| CP-02-024 | 02CW02401801XF | 18 | Water | | ND | 1.0 | |
| CP-02-024 | 02CW02403001XF | 30 | Water | | ND | 1.0 | |
| CP-02-025 | 02CW02500801XF | 8 | Water | | ND | 1.0 | |
| CP-02-025 | 02CW02501801XF | 18 | Water | Trichloroethene | 50 | 5.0 | |
| CP-02-025 | 02CW02502501XF | 25 | Water | | ND | 1.0 | |
| CP-02-026 | 02CW02605001XF | 50 | Water | | ND | 1.0 | |
| CP-02-026 | 02CW02606201XF | 62 | Water | | ND | 1.0 | |
| CP-02-027 | 02CW02704201XF | 42 | Water | | ND | 1.0 | |
| CP-02-028 | 02CW02800701XF | 7 | Water | | ND | 1.0 | |
| CP-02-028 | 02CW02801401XF | 14 | Water | | ND | 1.0 | |
| CP-02-028 | 02CW02802001XF | 20 | Water | C-1,2-Dichloroethene | 1,500 | 100.0 | |
| CP-02-029 | 02CW02901601XF | 16 | Water | | ND | 1.0 | |
| CP-02-030 | 02CW03000701XF | 7 | Water | Trichloroethene | 2.5 | 1.0 | J5 |
| CP-02-030 | 02CW03001501XF | 15 | Water | C-1,2-Dichloroethene | 2.3 | 1.0 | J1J5 |
| CP-02-031 | 02CW03100801XF | 8 | Water | Trichloroethene | 11 | 1.0 | |
| CP-02-031 | 02CW03101401XF | 14 | Water | Trichloroethene | 420 | 100.0 | J5 |
| CP-02-031 | 02CW03101901XF | 19 | Water | | ND | 1.0 | |
| CP-02-032 | 02CW03200801XF | 8 | Water | | ND | 1.0 | |
| CP-02-032 | 02CW03201701XF | 17 | Water | Trichloroethene | 23 | 1.0 | |
| CP-02-032 | 02CW03202601XF | 26 | Water | | ND | 1.0 | |
| CP-02-033 | 02CW03302001XF | 20 | Water | | ND | 1.0 | |
| CP-02-033 | 02CW03303001XF | 30 | Water | | ND | 1.0 | |
| CP-02-033 | 02CW03304201XF | 42 | Water | | ND | 1.0 | |
| CP-02-034 | 02CW03403701XF | 37 | Water | | ND | 1.0 | |
| CP-02-034 | 02CW03405001XF | 50 | Water | | ND | 1.0 | |
| CP-02-035 | 02CW03501601XF | 16 | Water | Benzene | 5.6 | 1.0 | J1 |
| CP-02-035 | 02CW03502901XF | 29 | Water | Benzene | 1.4 | 1.0 | J1J5 |
| CP-02-035 | | 29 | | m/p-Xylene | 2.1 | 1.0 | J5 |
| CP-02-035 | | 29 | | Vinyl Chloride | 43 | 1.0 | |
| CP-02-035 | 02CW03504001XF | 40 | Water | Vinyl Chloride | 35 | 1.0 | |
| CP-02-036 | 02CW03602201XF | 22 | Water | Benzene | 9.3 | 1.0 | J1 |
| CP-02-036 | 02CW03603201XF | 32 | Water | Benzene | 2.6 | 1.0 | J1J5 |
| CP-02-036 | | 32 | | Ethylbenzene | 1.4 | 1.0 | J5 |
| CP-02-036 | | 32 | | Vinyl Chloride | 13 | 1.0 | J5 |
| CP-02-036 | 02CW03604201XF | 42 | Water | | ND | 1.0 | |
| CP-02-037 | 02CW03701001XF | 10 | Water | | ND | 1.0 | |
| CP-02-037 | 02CW03702001XF | 20 | Water | | ND | 1.0 | |
| CP-02-037 | 02CW03703201XF | 32 | Water | | ND | 1.0 | |
| CP-02-038 | 02CW03804301XF | 43 | Water | | ND | 1.0 | |
| CP-02-039 | 02CW03902001XF | 20 | Water | C-1,2-Dichloroethene | 500 | 20.0 | J1 |
| CP-02-039 | | 20 | | Trichloroethene | 30 | 20.0 | |

# DATA QUALIFIER DEFINITIONS

| QUALIFIER | | DEFINITION |
|---|---|---|
| **Qualifiers for Organic Data** | | |
| J | - | Indicates an estimated concentration because results are either below the contract required detection level (CRQL) or quality control criteria were not met. |
| JJ | - | Validation qualifier for concentrations below the CRQL. |
| U | - | Indicates that compound was analyzed but not detected. |
| UJ | - | Indicates that quantitation level was estimated because quality control (QC) criteria were not met. |
| B | - | Indicates analyte was detected in both the sample and the associated laboratory method blank. |
| E | - | Indicates that the analyte concentration exceeded the calibration range of the gas chromatograph/mass spectrograph and that a reanalysis of a diluted sample is required. |
| D | - | Indicates that sample concentration was obtained by dilution to bring result within calibration range. |
| R | - | Indicates that data is unusable because QC criteria were not met. |
| X | - | Laboratory-defined qualifier used to provide additional information not covered by the other qualifiers. |
| **Qualifiers for Inorganic Data** | | |
| E | - | The reported concentration is estimated because of the presence of an interference. |
| J | - | Indicates an estimated concentration because QC criteria were not met. |
| R | - | Indicates that data is unusable because QC criteria were not met. |
| M | - | Duplicate precision criteria were not met. |
| N | - | Spiked sample recovery not within control limits. |
| s | - | The reported concentration was determined by the method of standard additions. |
| W | - | Post-digestion spike for furnace atomic adsorption analysis is outside control limits. |
| [] | - | Concentration reported is below CRQL. |
| * | - | Duplicate analysis not within control limits. |
| + | - | Correlation coefficient for the method of standard additions was less than 0.995 |
| **Other Notations** | | |
| NR | - | Analysis not requested. |
| NA | - | Analysis requested but not performed. |
| - | - | Compound analyzed but not detected. |

# SUMMARY TABLES

# PHASE I REMEDIAL INVESTIGATION

PROJECT: Plattsburgh

# MONITORING WELL SAMPLE ANALYSIS - FT-1 Fire Training Area

Summary Table

| VOLATILE ORGANIC COMPOUNDS UNITS: ug/L | CRDL | 01MW101XXX02XX | 01MW102XXX02XX | 01MW103XXX02XX | 01MW104XXX02XX | 01MW105XXX02XX | 01MW106XXX02XX | 01MW107XXX02XX | 01MW126XXX02XX |
|---|---|---|---|---|---|---|---|---|---|
| LAB NUMBER: | | 241230 | 241252 | 241648RE | 241226 | 241649 | 241242 | 241254 | 241253 |
| DATE SAMPLED: | | 01/17/89 | 01/17/89 | 01/18/89 | 01/17/89 | 01/18/89 | 01/17/89 | 01/17/89 | 01/17/89 |
| DATE SAMPLE PREP.: | | 01/18/89 | 01/25/89 | 01/29/89 | 01/18/89 | 01/27/89 | 01/19/89 | 01/25/89 | 01/25/89 |
| DATE SAMPLE ANALYZED: | | 01/18/89 | 01/25/89 | 01/29/89 | 01/18/89 | 01/27/89 | 01/19/89 | 01/25/89 | 01/25/89 |
| MATRIX: | | Water | Water | Water | Water | Water | Water | Water | Water |
| Chloromethane | 10 | - | - | - | - | - | - | - | - |
| Bromomethane | 10 | - | - | - | - | - | - | - | - |
| Vinyl Chloride | 10 | - | - | - | - | - | - | - | - |
| Chloroethane | 10 | - | - | - | - | - | - | - | - |
| Methylene Chloride | 5 | - | - | - | - | - | - | - | - |
| Acetone | 10 | - | - | - | - | - | - | - | - |
| Carbon Disulfide | 5 | - | - | - | - | - | - | - | - |
| 1,1-Dichloroethene | 5 | - | - | - | - | - | - | - | - |
| 1,1-Dichloroethane | 5 | - | - | - | - | - | - | - | - |
| 1,2-Dichloroethene (total) | 5 | - | - | - | - | - | 3200 | - | 7 |
| Chloroform | 5 | - | - | - | - | - | - | - | - |
| 1,2-Dichloroethane | 5 | - | - | - | - | - | - | - | - |
| 2-Butanone | 10 | R | 11 J | R | 76 J | - | - | 690 JD | 38 J |
| 1,1,1-Trichloroethane | 5 | - | - | - | - | - | - | - | - |
| Carbon Tetrachloride | 5 | - | - | - | - | - | - | - | - |
| Vinyl Acetate | 10 | - | - | - | - | - | - | - | - |
| Bromodichloromethane | 5 | - | - | - | - | - | - | - | - |
| 1,2-Dichloropropane | 5 | - | - | - | - | - | - | - | - |
| cis-1,3-Dichloropropene | 5 | - | - | - | - | - | - | - | - |
| Trichloroethene | 5 | - | - | - | - | - | - | - | 150 |
| Dibromochloromethane | 5 | - | - | - | - | - | - | - | - |
| 1,1,2-Trichloroethane | 5 | - | - | - | - | - | - | - | - |
| Benzene | 5 | - | - | - | - | - | - | - | - |
| Trans-1,3-Dichloropropene | 5 | - | - | - | - | - | - | - | - |
| Bromoform | 5 | - | - | - | - | - | - | - | - |
| 4-Methyl-2-Pentanone | 10 | - | - | - | - | - | - | - | - |
| 2-Hexanone | 10 | - | - | - | - | - | - | - | - |
| Tetrachloroethene | 5 | - | - | - | - | - | - | - | - |
| 1,1,2,2-Tetrachloroethane | 5 | - | - | - | - | - | - | - | - |
| Toluene | 5 | - | - | 1400 J | - | - | 1900 | 27 J | - |
| Chlorobenzene | 5 | - | - | - | - | - | - | - | - |
| Ethylbenzene | 5 | - | - | 860 J | - | 920 J | 1400 | 20 J | - |
| Styrene | 5 | - | - | - | - | - | - | - | - |
| Xylenes (Total) | 5 | - | - | 13000 J | - | 1800 J | 9300 | 110 J | - |
| Dilution Factor | | 1 | 1 | 125 | 1 | 6.3 | 125 | 1 | 1 |
| Laboratory Method Blank | | CB890118B11 | CC890124B23 | CB890128A09 | CB890118B11 | CD890127C09 | CB890119C23 | CC890124B23 | CC890124B23 |
| Associated Equipment Blank | | 00SB205XXX02XX* | 00SB205XXX02XX* | 00SB206XXX02XX | 00SB205XXX02XX* | 00SB206XXX02XX | 00SB205XXX02XX* | 00SB205XXX02XX* | 00SB205XXX02XX* |
| Associated Trip Blank | | 00TB105XXX02XX | 00BT105XXX02XX | 00BT106XXX02XX | 00TB105XXX02XX | 00BT106XXX02XX | 00BT105XXX02XX | 00BT105XXX02XX | 00BT105XXX02XX |
| Associated Field Blanks | | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX |

* = Helc analysis.

# MONITORING WELL SAMPLE ANALYSIS - FT-1 Fire Training Area

Summary Table

| VOLATILE ORGANIC COMPOUNDS UNITS: ug/L | CRDL | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID: | | 01MW127XXX02XX | 01MW301XXX01XX | 01MW304XXX01XX | 01MW306XXX01XX | 01MW307XXX01XX | 01MW307XXX01XD | 01MW308XXX01XX | 01MW309XXX01XX |
| LAB NUMBER: | | 241651 | 241653 | 241654 | 241238 | 241246 | 241250 | 241251 | 241655 |
| DATE SAMPLED: | | 01/18/89 | 01/18/89 | 01/18/89 | 01/17/89 | 01/17/89 | 01/17/89 | 01/17/89 | 01/18/89 |
| DATE SAMPLE PREP.: | | 01/28/89 | 01/23/89 | 01/27/89 | 01/19/89 | 01/24/89 | 01/24/89 | 01/24/89 | 01/23/89 |
| DATE SAMPLE ANALYZED: | | 01/28/89 | 01/23/89 | 01/27/89 | 01/19/89 | 01/24/89 | 01/24/89 | 01/24/89 | 01/23/89 |
| MATRIX: | | Water | Water | Water | Water | Water | Water | Water | Water |
| Chloromethane | 10 | - | - | - | - | - | - | - | - |
| Bromomethane | 10 | - | - | - | - | - | - | - | - |
| Vinyl Chloride | 10 | - | - | - | - | - | - | - | - |
| Chloroethane | 10 | - | - | - | - | - | - | - | - |
| Methylene Chloride | 5 | - | - | - | - | - | - | - | - |
| Acetone | 10 | - | - | - | - | - | - | - | - |
| Carbon Disulfide | 5 | - | - | - | - | - | - | - | - |
| 1,1-Dichloroethene | 5 | - | - | - | - | - | - | - | - |
| 1,1-Dichloroethane | 5 | - | - | - | - | - | - | - | - |
| 1,2-Dichloroethene (total) | 5 | - | 1000 D | 7300 | - | - | - | 270 | 6600 |
| Chloroform | 5 | - | - | - | - | - | - | - | - |
| 1,2-Dichloroethane | 5 | - | - | - | - | - | - | - | - |
| 2-Butanone | 10 | 610 J | 32 J | R | R | R | R | R | R |
| 1,1,1-Trichloroethane | 5 | - | - | - | - | - | - | - | - |
| Carbon Tetrachloride | 5 | - | - | - | - | - | - | - | - |
| Vinyl Acetate | 10 | - | - | - | - | - | - | - | - |
| Bromodichloromethane | 5 | - | - | - | - | - | - | - | - |
| 1,2-Dichloropropane | 5 | - | - | - | - | - | - | - | - |
| cis-1,3-Dichloropropene | 5 | - | - | - | - | - | - | - | - |
| Trichloroethene | 5 | 85 | 390 D | - | - | 2300 | 2500 | - | - |
| Dibromochloromethane | 5 | - | - | - | - | - | - | - | - |
| 1,1,2-Trichloroethane | 5 | - | - | - | - | - | - | - | - |
| Benzene | 5 | - | 30 | - | - | - | - | 16 | - |
| Trans-1,3-Dichloropropene | 5 | - | - | - | - | - | - | - | - |
| Bromoform | 5 | - | - | - | - | - | - | - | - |
| 4-Methyl-2-Pentanone | 10 | - | - | - | - | - | - | - | - |
| 2-Hexanone | 10 | - | - | - | - | - | - | - | - |
| Tetrachloroethene | 5 | - | - | - | - | - | - | - | - |
| 1,1,2,2-Tetrachloroethane | 5 | - | - | - | - | - | - | - | - |
| Toluene | 5 | - | 99 | 1700 J | - | - | - | - | 340 |
| Chlorobenzene | 5 | - | - | - | - | - | - | - | - |
| Ethylbenzene | 5 | - | 7 | 850 J | - | - | - | 23 | 540 |
| Styrene | 5 | - | - | - | - | - | - | - | - |
| Xylenes (Total) | 5 | - | 37 | 3000 J | - | - | - | 28 | 1800 |
| Dilution Factor | | 3.3 | 1 | 50 | 1 | 14 | 14 | 1.5 | 50 |
| Laboratory Method Blank | | CB890128A09 | CB890123A09 | CD890127C09 | CB890118B11 | CB890124C23 | CB890124A23 | CB890124A23 | CB890123C12 |
| Associated Equipment Blank | | 00SB206XXX02XX | 00SB206XXX02XX | 00SB206XXX02XX | 00SB205XXX02XX* | 00SB205XXX02XX* | 00SB205XXX02XX* | 00SB205XXX02XX* | 00SB206XXX02XX |
| Associated Trip Blank | | 00BT106XXX02XX | 00BT106XXX02XX | 00BT106XXX02XX | 00TB105XXX02XX | 00BT105XXX02XX | 00BT105XXX02XX | 00BT105XXX02XX | 00BT106XXX02XX |
| Associated Field Blanks | | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX |
| | | - | - | - | - | - | - | - | - |

* = Held for analysis.

PROJECT: Plattsburgh

# MONITORING WELL SAMPLE ANALYSIS - FT-1 Fire Training Area

Summary Table

| SAMPLE ID: | | 01MW309XXX01XD | 01MW310XXX01XX | 01MW311XXX01XX | 01MW312XXX01XX | 01MW313XXX01XX | 01MW314XXX01XX | 01MW315XXX01XX | 01MW316XXX01XX |
|---|---|---|---|---|---|---|---|---|---|
| LAB NUMBER: | | 241656 | 241657 | 240573 | 240457 | 241233 | 241235 | 241658 | 240003 |
| DATE SAMPLED: | | 01/18/89 | 01/18/89 | 01/13/89 | 01/12/89 | 01/17/89 | 01/17/89 | 01/18/89 | 01/12/89 |
| DATE SAMPLE PREP.: | | 01/28/89 | 01/23/89 | 01/16/89 | 01/16/89 | 01/18/89 | 01/19/89 | 01/27/89 | 01/12/89 |
| DATE SAMPLE ANALYZED: | | 01/28/89 | 01/23/89 | 01/16/89 | 01/16/89 | 01/18/89 | 01/19/89 | 01/27/89 | 01/12/89 |
| MATRIX: | | Water | Water | Water | Water | Water | Water | Water | Water |
| VOLATILE ORGANIC COMPOUNDS UNITS: ug/L | CRDL | | | | | | | | |
| Chloromethane | 10 | - | - | - | - | - | - | - | - |
| Bromomethane | 10 | - | - | - | - | - | - | - | - |
| Vinyl Chloride | 10 | - | - | - | - | - | - | - | - |
| Chloroethane | 10 | - | - | - | - | - | - | - | - |
| Methylene Chloride | 5 | - | - | - | - | - | - | - | - |
| Acetone | 10 | - | - | - | - | - | 11 | - | - |
| Carbon Disulfide | 5 | - | - | - | - | - | - | - | - |
| 1,1-Dichloroethene | 5 | - | - | - | - | - | - | - | - |
| 1,1-Dichloroethane | 5 | - | - | - | - | - | - | - | - |
| 1,2-Dichloroethene (total) | 5 | 7800 | 7200 D | 58 | 20 | - | - | 4300 | - |
| Chloroform | 5 | - | - | - | - | - | - | - | - |
| 1,2-Dichloroethane | 5 | - | - | - | - | - | - | - | - |
| 2-Butanone | 10 | R | 230 J | R | R | 35 J | 20 J | R | 85 J |
| 1,1,1-Trichloroethane | 5 | - | - | - | - | - | - | - | - |
| Carbon Tetrachloride | 5 | - | - | - | - | - | - | - | - |
| Vinyl Acetate | 10 | - | - | - | - | - | - | - | - |
| Bromodichloromethane | 5 | - | - | - | - | - | - | - | - |
| 1,2-Dichloropropane | 5 | - | - | - | - | - | - | - | - |
| cis-1,3-Dichloropropene | 5 | - | - | - | - | - | - | - | - |
| Trichloroethene | 5 | - | - | 15 | 10 | 28 | - | - | - |
| Dibromochloromethane | 5 | - | - | - | - | - | - | - | - |
| 1,1,2-Trichloroethane | 5 | - | - | - | - | - | - | - | - |
| Benzene | 5 | - | 260 | - | - | - | - | 550 J | - |
| Trans-1,3-Dichloropropene | 5 | - | - | - | - | - | - | - | - |
| Bromoform | 5 | - | - | - | - | - | - | - | - |
| 4-Methyl-2-Pentanone | 10 | - | - | - | - | - | - | - | - |
| 2-Hexanone | 10 | - | - | - | - | - | - | - | - |
| Tetrachloroethene | 5 | - | - | - | - | - | - | - | - |
| 1,1,2,2-Tetrachloroethane | 5 | - | - | - | - | - | - | - | - |
| Toluene | 5 | 310 J | 460 | - | - | - | - | 4200 J | - |
| Chlorobenzene | 5 | - | - | - | - | - | - | - | - |
| Ethylbenzene | 5 | 510 J | 250 | - | - | - | - | 470 J | - |
| Styrene | 5 | - | - | - | - | - | - | - | - |
| Xylenes (Total) | 5 | 2600 J | 1000 | - | - | 6 | 13 | 5000 J | - |
| Dilution Factor | | 50 | 10 | 1 | 1 | 1 | 1 | 28 | 1 |
| Laboratory Method Blank | | CB890128A09 | CB890123A09 | CC890116C11 | CB890116A09 | CB890118B11 | CB890118B11 | CD890127C09 | CB890112B11 |
| Associated Equipment Blank | | 00SB206XXX02XX | 00SB206XXX02XX | 00SB204XXX02XX | 00SB203XXX02XX | 00SB205XXX02XX* | 00SB205XXX02XX* | 00SB206XXX02XX | 00SB202XXX02XX* |
| Associated Trip Blank | | 00BT106XXX02XX | 00BT106XXX02XX | 00TB104XXX02XX | 00BT103XXX02XX | 00TB105XXX02XX | 00TB105XXX02XX | 00BT106XXX02XX | 00BT103XXX02XX |
| Associated Field Blanks | | 00MH001XXX01XX - | 00MH001XXX01XX - | 00MH001XXX01XX 00DI201XXX02XX | 00MH001XXX01XX 00DI201XXX02XX | 00MH001XXX01XX - | 00MH001XXX01XX - | 00MH001XXX01XX - | 00MH001XXX01XX 00DI201XXX02XX |

* = Hel analysis.

PROJECT: Plattsburgh

# MONITORING WELL SAMPLE ANALYSIS - FT-1 Fire Training Area

Summary Table

| SAMPLE ID: | | 01MW317XXX01XX | 01MW318XXX01XX | 01MW319XXX01XX | 01MW319XXX01XD | 01MW336XXX01XX | 01MW337XXX01XX |
|---|---|---|---|---|---|---|---|
| LAB NUMBER: | | 239995 | 241659 | 241663 | 241664 | 241665 | 241672 |
| DATE SAMPLED: | | 01/11/89 | 01/18/89 | 01/18/89 | 01/18/89 | 01/18/89 | 01/18/89 |
| DATE SAMPLE PREP.: | | 01/13/89 | 01/27/89 | 01/23/89 | 01/23/89 | 01/23/89 | 01/20/89 |
| DATE SAMPLE ANALYZED: | | 01/13/89 | 01/27/89 | 01/23/89 | 01/23/89 | 01/23/89 | 01/20/89 |
| MATRIX: | | Water | Water | Water | Water | Water | Water |
| VOLATILE ORGANIC COMPOUNDS UNITS: ug/L | CRDL | | | | | | |
| Chloromethane | 10 | - | - | - | - | - | - |
| Bromomethane | 10 | - | - | - | - | - | - |
| Vinyl Chloride | 10 | - | - | - | - | - | - |
| Chloroethane | 10 | - | - | - | - | - | - |
| Methylene Chloride | 5 | - | - | - | - | - | - |
| Acetone | 10 | 23 J | - | - | - | - | - |
| Carbon Disulfide | 5 | - | - | - | - | - | - |
| 1,1-Dichloroethene | 5 | - | - | - | - | - | - |
| 1,1-Dichloroethane | 5 | - | - | - | - | - | - |
| 1,2-Dichloroethene (total) | 5 | - | 9300 | - | - | 130 | 5000 D |
| Chloroform | 5 | - | - | - | - | - | - |
| 1,2-Dichloroethane | 5 | - | - | - | - | - | - |
| 2-Butanone | 10 | 120 J | R | 38 J | 28 J | R | R |
| 1,1,1-Trichloroethane | 5 | - | - | - | - | - | - |
| Carbon Tetrachloride | 5 | - | - | - | - | - | - |
| Vinyl Acetate | 10 | - | - | - | - | - | - |
| Bromodichloromethane | 5 | - | - | - | - | - | - |
| 1,2-Dichloropropane | 5 | - | - | - | - | - | - |
| cis-1,3-Dichloropropene | 5 | - | - | - | - | - | - |
| Trichloroethene | 5 | - | - | 15 J | 11 J | 87 | - |
| Dibromochloromethane | 5 | - | - | - | - | - | - |
| 1,1,2-Trichloroethane | 5 | - | - | - | - | - | - |
| Benzene | 5 | - | 600 J | - | - | - | 720 |
| Trans-1,3-Dichloropropene | 5 | - | - | - | - | - | - |
| Bromoform | 5 | - | - | - | - | - | - |
| 4-Methyl-2-Pentanone | 10 | - | - | - | - | - | - |
| 2-Hexanone | 10 | - | - | - | - | - | - |
| Tetrachloroethene | 5 | - | - | - | - | - | - |
| 1,1,2,2-Tetrachloroethane | 5 | - | - | - | - | - | - |
| Toluene | 5 | - | 400 J | - | - | - | 2100 D |
| Chlorobenzene | 5 | - | - | - | - | - | - |
| Ethylbenzene | 5 | - | 670 J | - | - | - | 1000 |
| Styrene | 5 | - | - | - | - | - | - |
| Xylenes (Total) | 5 | - | 1900 J | - | - | - | 3400 D |
| Dilution Factor | | 1 | 1 | 1 | 1 | 1.3 | 10 |
| Laboratory Method Blank | | CB890112B11 | CD890127C09 | CB890123A09 | CB890123A09 | CB890123C12 | CB890120B12 |
| Associated Equipment Blank | | 00SB202XXX02XX* | 00SB206XXX02XX | 00SB206XXX02XX | 00SB206XXX02XX | 00SB206XXX02XX | 00SB206XXX02XX |
| Associated Trip Blank | | 00BT102XXX02XX | 00BT106XXX02XX | 00BT106XXX02XX | 00BT106XXX02XX | 00BT106XXX02XX | 00BT106XXX02XX |
| Associated Field Blanks | | 00MH001XXX01XX<br>00DI201XXX02XX | 00MH001XXX01XX<br>- | 00MH001XXX01XX<br>- | 00MH001XXX01XX<br>- | 00MH001XXX01XX<br>- | 00MH001XXX01XX<br>- |

* = Held for analysis.

PROJECT: Plattsburgh

MONITORING WELL SAMPLE ANALYSIS - FT-1 Fire Training Area

Summary Table

| METHOD 8010 VOLATILE ORGANIC COMPOUNDS UNITS: ug/L | DL | 01MW127XXX02XX | 01MW307XXX01XX | 01MW309XXX01XX | 01MW309XXX01XD | 01MW310XXX01XX | 01MW336XXX01XX |
|---|---|---|---|---|---|---|---|
| LAB NUMBER: | | 241692 | 241216 | 241694 | 241701 | 241695 | 241700 |
| DATE SAMPLED: | | 01/18/89 | 01/17/89 | 01/18/89 | 01/18/89 | 01/18/89 | 01/18/89 |
| MATRIX: | | Water | Water | Water | Water | Water | Water |
| Chloromethane | 0.5 | - | - | - | - | - | - |
| Bromomethane | 0.5 | - | - | - | - | - | - |
| Vinyl Chloride | 0.5 | - | - | - | - | - | - |
| Chloroethane | 0.5 | - | - | - | - | 580 J | - |
| Methylene Chloride | 1 | - | - | - | - | - | - |
| 1,1-Dichloroethene | 0.3 | - | - | - | - | - | - |
| 1,1-Dichloroethane | 0.4 | - | - | - | - | - | - |
| 1,2-Dichloroethene (total) | 0.2 | 8.6 | 9.4 | - | - | 200 | - |
| Chloroform | 0.2 | - | 0.8 | - | - | - | - |
| 1,2-Dichloroethane | 0.3 | - | - | - | - | - | - |
| 1,1,1-Trichloroethane | 0.3 | - | - | - | - | - | - |
| Carbon Tetrachloride | 0.3 | - | - | - | - | - | - |
| Bromodichloromethane | 0.4 | - | - | - | - | - | - |
| 1,2-Dichloropropane | 0.2 | - | - | - | - | - | - |
| Cis-1,3-Dichloropropene | 0.3 | - | - | - | - | - | - |
| Trichloroethene | 0.2 | 100 | 1900 | - | - | - | 100 |
| Dibromochloromethane | 0.2 | - | - | - | - | - | - |
| 1,1,2-Trichloroethane | 0.2 | - | - | - | - | - | - |
| Trans-1,3-Dichloropropene | 0.2 | - | - | - | - | - | - |
| 2-Chloroethylvinylether | 0.4 | - | - | - | - | - | - |
| Bromoform | 0.5 | - | - | - | - | - | - |
| 1,1,2,2-Tetrachloroethane | 0.4 | - | - | - | - | - | - |
| Tetrachloroethene | 0.2 | - | 20 | - | - | - | - |
| Chlorobenzene | 0.4 | - | - | - | - | - | - |
| 1,3 Dichlorobenzene | 0.2 | - | 1.5 | - | - | - | - |
| 1,2 Dichlorobenzene | 0.2 | - | - | - | - | - | - |
| 1,4 Dichlorobenzene | 0.2 | - | - | - | - | - | - |
| Freon 113 | 1 | NA | 8.8 | NA | NA | NA | NA |
| Dilution Factor | | 20 | - | 500 | 500 | 500 | 20 |
| Laboratory Method Blank | | P17803 | - | R04023 | R04023 | R04023 | R04023 |
| Associated Equipment Blank | | 00SB206XXX02XX | 00SB205XXX02XX | 00SB206XXX02XX | 00SB206XXX02XX | 00SB206XXX02XX | 00SB206XXX02XX |

PROJECT: Plattsburgh

MONITORING WELL SAMPLE ANALYSIS - FT-1 Fire Training Area

Summary Table

| SAMPLE ID: | | 01MW101XXX02XX | 01MW102XXX02XX | 01MW103XXX02XX | 01MW104XXX02XX | 01MW105XXX02XX | 01MW106XXX02XX | 01MW107XXX02XX | 01MW126XXX02XX |
|---|---|---|---|---|---|---|---|---|---|
| LAB NUMBER: | | 241230 | 241252 | 241648 | 241226 | 241649 | 241242 | 241254 | 241253 |
| DATE SAMPLED: | | 01/17/89 | 01/17/89 | 01/18/89 | 01/17/89 | 01/18/89 | 01/17/89 | 01/17/89 | 01/17/89 |
| DATE SAMPLE PREP.: | | 01/19/89 | 01/19/89 | 01/27/89 | 01/19/89 | 01/23/89 | 01/19/89 | 01/19/89 | 01/19/89 |
| DATE SAMPLE ANALYZED: | | 01/27/89 | 01/27/89 | 01/31/89 | 01/27/89 | 01/27/89 | 02/08/89 | 01/27/89 | 01/27/89 |
| MATRIX: | | Water | Water | Water | Water | Water | Water | Water | Water |
| SEMI-VOLATILE ORGANIC COMPOUNDS UNITS: ug/L | CRDL | | | | | | | | |
| Phenol | 10 | - | - | - | - | - | - | - | - |
| bis(2-Chloroethyl)ether | 10 | - | - | - | - | - | - | - | - |
| 2-Chlorophenol | 10 | - | - | - | - | - | - | - | - |
| 1,3-Dichlorobenzene | 10 | - | - | - | - | - | - | - | - |
| 1,4-Dichlorobenzene | 10 | - | - | - | - | - | - | - | - |
| Benzyl alcohol | 10 | - | - | - | - | - | - | - | - |
| 1,2-Dichlorobenzene | 10 | - | - | 1200 J | - | - | - | - | - |
| 2-Methylphenol | 10 | - | - | - | - | - | - | - | - |
| bis(2-Chloroisopropyl)ether | 10 | - | - | - | - | - | - | - | - |
| 4-Methylphenol | 10 | - | - | - | - | - | - | - | - |
| N-Nitroso-di-n-propylamine | 10 | - | - | - | - | - | - | - | - |
| Hexachloroethane | 10 | - | - | - | - | - | - | - | - |
| Nitrobenzene | 10 | - | - | - | - | - | - | - | - |
| Isophorone | 10 | - | - | - | - | - | - | - | - |
| 2-Nitrophenol | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dimethylphenol | 10 | - | - | - | - | - | - | - | - |
| Benzoic acid | 50 | - | - | - | - | - | - | - | - |
| bis(2-Chloroethoxy)methane | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dichlorophenol | 10 | - | - | - | - | - | - | - | - |
| 1,2,4-Trichlorobenzene | 10 | - | - | - | - | - | - | - | - |
| Naphthalene | 10 | - | - | 3700 J | - | 29 | 940 J | - | - |
| 4-Chloroaniline | 10 | - | - | - | - | - | - | - | - |
| Hexacholorobutadiene | 10 | - | - | - | - | - | - | - | - |
| 4-Chloro-3-Methylphenol | 10 | - | - | - | - | - | - | - | - |
| 2-Methylnaphthalene | 10 | - | - | 9600 J | - | 17 | 2000 J | 14 | - |
| Hexachlorocyclopentadiene | 10 | - | - | - | - | - | - | - | - |
| 2,4,6-Trichlorophenol | 10 | - | - | - | - | - | - | - | - |
| 2,4,5-Trichlorophenol | 50 | - | - | - | - | - | - | - | - |
| 2-Chloronaphthalene | 10 | - | - | - | - | - | - | - | - |
| 2-Nitroaniline | 50 | - | - | - | - | - | - | - | - |
| Dimethylphthalate | 10 | - | - | - | - | - | - | - | - |
| Acenaphthylene | 10 | - | - | - | - | - | - | - | - |
| 2,6-Dinitrotoluene | 10 | - | - | - | - | - | - | - | - |

* = Held for analysis

PROJECT: Plattsburgh

MONITORING WELL SAMPLE ANALYSIS - FT-1 Fire Training Area

Summary Table

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID: | | 01MW101XXX02XX | 01MW102XXX02XX | 01MW103XXX02XX | 01MW104XXX02XX | 01MW105XXX02XX | 01MW106XXX02XX | 01MW107XXX02XX | 01MW126XXX02XX |
| LAB NUMBER: | | 241230 | 241252 | 241648 | 241226 | 241649 | 241242 | 241254 | 241253 |
| DATE SAMPLED: | | 01/17/89 | 01/17/89 | 01/18/89 | 01/17/89 | 01/18/89 | 01/17/89 | 01/17/89 | 01/17/89 |
| DATE SAMPLE PREP.: | | 01/19/89 | 01/19/89 | 01/27/89 | 01/19/89 | 01/23/89 | 01/19/89 | 01/19/89 | 01/19/89 |
| DATE SAMPLE ANALYZED: | | 01/27/89 | 01/27/89 | 01/31/89 | 01/27/89 | 01/27/89 | 02/08/89 | 01/27/89 | 01/27/89 |
| MATRIX: | | Water | Water | Water | Water | Water | Water | Water | Water |
| SEMI-VOLATILE ORGANIC COMPOUNDS UNITS: ug/L | CRDL | | | | | | | | |
| 3-Nitroaniline | 50 | - | - | - | - | - | - | - | - |
| Acenaphthene | 10 | - | - | 780 J | - | - | - | - | - |
| 2,4-Dinitrophenol | 50 | - | - | - | - | - | - | - | - |
| 4-Nitrophenol | 50 | - | - | - | - | - | - | - | - |
| Dibenzofuran | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dinitrotoluene | 10 | - | - | - | - | - | - | - | - |
| Diethylphthalate | 10 | - | - | - | - | - | - | - | - |
| 4-Chlorophenyl-phenylether | 10 | - | - | - | - | - | - | - | - |
| Fluorene | 10 | - | - | - | - | - | - | - | - |
| 4-Nitroaniline | 50 | - | - | - | - | - | - | - | - |
| 4,6-Dinitro-2-methylphenol | 50 | - | - | - | - | - | - | - | - |
| N-Nitrosodiphenylamine | 10 | - | - | - | - | - | - | - | - |
| 4-Bromophenyl-phenylether | 10 | - | - | - | - | - | - | - | - |
| Hexachlorobenzene | 10 | - | - | - | - | - | - | - | - |
| Pentachlorophenol | 50 | - | - | - | - | - | - | - | - |
| Phenanthrene | 10 | - | - | 1700 J | - | - | - | - | - |
| Anthracene | 10 | - | - | - | - | - | - | - | - |
| Di-n-butylphthalate | 10 | - | - | - | - | - | - | - | - |
| Fluoranthene | 10 | - | - | - | - | - | - | - | - |
| Pyrene | 10 | - | - | - | - | - | - | - | - |
| Butylbenzylphthalate | 10 | - | - | - | - | - | - | - | - |
| 3,3'-Dichlorobenzidine | 20 | - | - | - | - | - | - | - | - |
| Benzo(a)Anthracene | 10 | - | - | - | - | - | - | - | - |
| Chrysene | 10 | - | - | - | - | - | - | - | - |
| bis(2-Ethylhexyl)phthalate | 10 | - | - | 1100 J | - | - | - | - | - |
| Di-n-octylphthalate | 10 | - | - | - | - | - | - | - | - |
| Benzo(b)Fluoranthene | 10 | - | - | - | - | - | - | - | - |
| Benzo(k)Fluoranthene | 10 | - | - | - | - | - | - | - | - |
| Benzo(a)Pyrene | 10 | - | - | - | - | - | - | - | - |
| Indeno(1,2,3-cd)pyrene | 10 | - | - | - | - | - | - | - | - |
| Dibenz(a,h)anthracene | 10 | - | - | - | - | - | - | - | - |
| Benzo(g,h,i,)perylene | 10 | - | - | - | - | - | - | - | - |
| Dilution Factor | | 1 | 1 | 70 | 1 | 1 | 8 | 1 | 1 |
| Laboratory Method Blank | | GJ04262C15 | GH041353A16 | G3J42983C15 | GJ04262C15 | GH042079C16 | GH041353A16 | GH041353A16 | GH041353A16 |
| Associated Equipment Blank | | 00SB205XXX02XX* | 00SB205XXX02XX* | 00SB206XXX02XX | 00SB205XXX02XX* | 00SB206XXX02XX | 00SB205XXX02XX* | 00SB205XXX02XX* | 00SB205XXX02XX* |
| Associated Field Blanks | | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX |
| | | - | - | - | - | - | - | - | - |

* = for analysis

PROJECT: Plattsburgh

MONITORING WELL SAMPLE ANALYSIS - FT-1 Fire Training Area

Summary Table

| SAMPLE ID: | | 01MW127XXX02XX | 01MW301XXX01XX | 01MW304XXX01XX | 01MW306XXX01XX | 01MW307XXX01XX | 01MW307XXX01XD | 01MW308XXX01XX | 01MW309XXX01XX |
|---|---|---|---|---|---|---|---|---|---|
| LAB NUMBER: | | 241651 | 241653 | 241654 | 241238 | 241246 | 241250 | 241251 | 241655 |
| DATE SAMPLED: | | 01/18/89 | 01/18/89 | 01/18/89 | 01/17/89 | 01/17/89 | 01/17/89 | 01/17/89 | 01/18/89 |
| DATE SAMPLE PREP.: | | 01/23/89 | 01/23/89 | 01/23/89 | 01/19/89 | 01/19/89 | 01/19/89 | 01/19/89 | 02/04/89 |
| DATE SAMPLE ANALYZED: | | 01/26/89 | 01/26/89 | 01/26/89 | 01/27/89 | 01/27/89 | 01/27/89 | 01/27/89 | 02/26/89 |
| MATRIX: | | Water | Water | Water | Water | Water | Water | Water | Water |
| SEMI-VOLATILE ORGANIC COMPOUNDS UNITS: ug/L | CRDL | | | | | | | | |
| Phenol | 10 | - | - | 10 | - | - | - | R | - |
| bis(2-Chloroethyl)ether | 10 | - | - | - | - | - | - | - | - |
| 2-Chlorophenol | 10 | - | - | - | - | - | - | R | - |
| 1,3-Dichlorobenzene | 10 | - | - | - | - | - | - | - | - |
| 1,4-Dichlorobenzene | 10 | - | - | - | - | - | - | - | - |
| Benzyl alcohol | 10 | - | - | - | - | - | - | - | - |
| 1,2-Dichlorobenzene | 10 | - | - | - | - | - | - | - | - |
| 2-Methylphenol | 10 | - | - | - | - | - | - | R | 16 J |
| bis(2-Chloroisopropyl)ether | 10 | - | - | - | - | - | - | - | - |
| 4-Methylphenol | 10 | - | - | 79 J | - | - | - | R | 97 J |
| N-Nitroso-di-n-propylamine | 10 | - | - | - | - | - | - | - | - |
| Hexachloroethane | 10 | - | - | - | - | - | - | - | - |
| Nitrobenzene | 10 | - | - | - | - | - | - | - | - |
| Isophorone | 10 | - | - | - | - | - | - | - | - |
| 2-Nitrophenol | 10 | - | - | - | - | - | - | R | - |
| 2,4-Dimethylphenol | 10 | - | - | 33 | - | - | - | R | 33 J |
| Benzoic acid | 50 | - | - | - | - | - | - | - | - |
| bis(2-Chloroethoxy)methane | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dichlorophenol | 10 | - | - | - | - | - | - | R | - |
| 1,2,4-Trichlorobenzene | 10 | - | - | - | - | - | - | - | - |
| Naphthalene | 10 | - | - | 48 | - | - | - | - | 61 J |
| 4-Chloroaniline | 10 | - | - | - | - | - | - | - | - |
| Hexacholorobutadiene | 10 | - | - | - | - | - | - | - | - |
| 4-Chloro-3-Methylphenol | 10 | - | - | - | - | - | - | R | - |
| 2-Methylnaphthalene | 10 | - | - | 23 | - | - | - | - | 24 J |
| Hexachlorocyclopentadiene | 10 | - | - | - | - | - | - | - | - |
| 2,4,6-Trichlorophenol | 10 | - | - | - | - | - | - | R | - |
| 2,4,5-Trichlorophenol | 50 | - | - | - | - | - | - | R | - |
| 2-Chloronaphthalene | 10 | - | - | - | - | - | - | - | - |
| 2-Nitroaniline | 50 | - | - | - | - | - | - | - | - |
| Dimethylphthalate | 10 | - | - | - | - | - | - | - | - |
| Acenaphthylene | 10 | - | - | - | - | - | - | - | - |
| 2,6-Dinitrotoluene | 10 | - | - | - | - | - | - | - | - |

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PROJECT: Plattsburgh

MONITORING WELL SAMPLE ANALYSIS - FT-1 Fire Training Area

Summary Table

| SAMPLE ID: | | 01MW127XXX02XX | 01MW301XXX01XX | 01MW304XXX01XX | 01MW306XXX01XX | 01MW307XXX01XX | 01MW307XXX01XD | 01MW308XXX01XX | 01MW309XXX01XX |
|---|---|---|---|---|---|---|---|---|---|
| LAB NUMBER: | | 241651 | 241653 | 241654 | 241238 | 241246 | 241250 | 241251 | 241655 |
| DATE SAMPLED: | | 01/18/89 | 01/18/89 | 01/18/89 | 01/17/89 | 01/17/89 | 01/17/89 | 01/17/89 | 01/18/89 |
| DATE SAMPLE PREP.: | | 01/23/89 | 01/23/89 | 01/23/89 | 01/19/89 | 01/19/89 | 01/19/89 | 01/19/89 | 02/04/89 |
| DATE SAMPLE ANALYZED: | | 01/26/89 | 01/26/89 | 01/26/89 | 01/27/89 | 01/27/89 | 01/27/89 | 01/27/89 | 02/26/89 |
| MATRIX: | | Water | Water | Water | Water | Water | Water | Water | Water |
| SEMI-VOLATILE ORGANIC COMPOUNDS<br>UNITS: ug/L | CRDL | | | | | | | | |
| 3-Nitroaniline | 50 | - | - | - | - | - | - | - | - |
| Acenaphthene | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dinitrophenol | 50 | - | - | - | - | - | - | R | - |
| 4-Nitrophenol | 50 | - | - | - | - | - | - | R | - |
| Dibenzofuran | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dinitrotoluene | 10 | - | - | - | - | - | - | - | - |
| Diethylphthalate | 10 | - | - | - | - | - | - | - | - |
| 4-Chlorophenyl-phenylether | 10 | - | - | - | - | - | - | - | - |
| Fluorene | 10 | - | - | - | - | - | - | - | - |
| 4-Nitroaniline | 50 | - | - | - | - | - | - | - | - |
| 4,6-Dinitro-2-methylphenol | 50 | - | - | - | - | - | - | R | - |
| N-Nitrosodiphenylamine | 10 | - | - | - | - | - | - | - | - |
| 4-Bromophenyl-phenylether | 10 | - | - | - | - | - | - | - | - |
| Hexachlorobenzene | 10 | - | - | - | - | - | - | - | - |
| Pentachlorophenol | 50 | - | - | - | - | - | - | R | - |
| Phenanthrene | 10 | - | - | - | - | - | - | - | - |
| Anthracene | 10 | - | - | - | - | - | - | - | - |
| Di-n-butylphthalate | 10 | - | - | - | - | - | - | - | - |
| Fluoranthene | 10 | - | - | - | - | - | - | - | - |
| Pyrene | 10 | - | - | - | - | - | - | - | - |
| Butylbenzylphthalate | 10 | - | - | - | - | - | - | - | - |
| 3,3'-Dichlorobenzidine | 20 | - | - | - | - | - | - | - | - |
| Benzo(a)Anthracene | 10 | - | - | - | - | - | - | - | - |
| Chrysene | 10 | - | - | - | - | - | - | - | - |
| bis(2-Ethylhexyl)phthalate | 10 | - | - | - | - | - | - | - | - |
| Di-n-octylphthalate | 10 | - | - | - | - | - | - | - | - |
| Benzo(b)Fluoranthene | 10 | - | - | - | - | - | - | - | - |
| Benzo(k)Fluoranthene | 10 | - | - | - | - | - | - | - | - |
| Benzo(a)Pyrene | 10 | - | - | - | - | - | - | - | - |
| Indeno(1,2,3-cd)pyrene | 10 | - | - | - | - | - | - | - | - |
| Dibenz(a,h)anthracene | 10 | - | - | - | - | - | - | - | - |
| Benzo(g,h,i,)perylene | 10 | - | - | - | - | - | - | - | - |
| Dilution Factor | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Laboratory Method Blank | | GH042079C16 | GH042079C16 | GH042079C16 | GJ04262C15 | GH041353A16 | GH041353A16 | GH041353A16 | GJ043903A16 |
| Associated Equipment Blank | | 00SB206XXX02XX | 00SB206XXX02XX | 00SB206XXX02XX | 00SB205XXX02XX* | 00SB205XXX02XX* | 00SB205XXX02XX* | 00SB205XXX02XX* | 00SB206XXX02XX |
| Associated Field Blanks | | 00MH001XXX01XX<br>- | 00MH001XXX01XX<br>- | 00MH001XXX01XX<br>- | 00MH001XXX01XX<br>- | 00MH001XXX01XX<br>- | 00MH001XXX01XX<br>- | 00MH001XXX01XX<br>- | 00MH001XXX01XX<br>- |

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PROJECT: Plattsburgh

# MONITORING WELL SAMPLE ANALYSIS - FT-1 Fire Training Area

Summary Table

| SAMPLE ID: | | 01MW309XXX01XD | 01MW310XXX01XX | 01MW311XXX01XX | 01MW312XXX01XX | 01MW313XXX01XX | 01MW314XXX01XX | 01MW315XXX01XX | 01MW316XXX01XX |
|---|---|---|---|---|---|---|---|---|---|
| LAB NUMBER: | | 241656 | 241657 | 240573 | 240457 | 241233 | 241235 | 241658 | 240003 |
| DATE SAMPLED: | | 01/18/89 | 01/18/89 | 01/13/89 | 01/12/89 | 01/17/89 | 01/17/89 | 01/18/89 | 01/12/89 |
| DATE SAMPLE PREP.: | | 01/23/89 | 01/23/89 | 01/17/89 | 01/16/89 | 01/19/89 | 01/19/89 | 01/23/89 | 01/13/89 |
| DATE SAMPLE ANALYZED: | | 01/26/89 | 01/26/89 | 01/25/89 | 01/23/89 | 01/27/89 | 01/27/89 | 01/26/89 | 01/22/89 |
| MATRIX: | | Water | Water | Water | Water | Water | Water | Water | Water |
| SEMI-VOLATILE ORGANIC COMPOUNDS UNITS: ug/L | CRDL | | | | | | | | |
| Phenol | 10 | - | 16 | - | - | - | - | - | - |
| bis(2-Chloroethyl)ether | 10 | - | - | - | - | - | - | - | - |
| 2-Chlorophenol | 10 | - | - | - | - | - | - | - | - |
| 1,3-Dichlorobenzene | 10 | - | - | - | - | - | - | - | - |
| 1,4-Dichlorobenzene | 10 | - | - | - | - | - | - | - | - |
| Benzyl alcohol | 10 | - | - | - | - | - | - | - | - |
| 1,2-Dichlorobenzene | 10 | - | - | - | - | - | - | - | - |
| 2-Methylphenol | 10 | 10 J | 17 | - | - | - | - | 10 | - |
| bis(2-Chloroisopropyl)ether | 10 | - | - | - | - | - | - | - | - |
| 4-Methylphenol | 10 | 67 J | 140 J | - | - | - | - | 22 J | - |
| N-Nitroso-di-n-propylamine | 10 | - | - | - | - | - | - | - | - |
| Hexachloroethane | 10 | - | - | - | - | - | - | - | - |
| Nitrobenzene | 10 | - | - | - | - | - | - | - | - |
| Isophorone | 10 | - | - | - | - | - | - | - | - |
| 2-Nitrophenol | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dimethylphenol | 10 | 29 | 98 | - | - | - | - | 12 | - |
| Benzoic acid | 50 | - | - | - | - | - | - | - | - |
| bis(2-Chloroethoxy)methane | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dichlorophenol | 10 | - | - | - | - | - | - | - | - |
| 1,2,4-Trichlorobenzene | 10 | - | - | - | - | - | - | - | - |
| Naphthalene | 10 | 41 J | 26 | - | - | - | - | 51 | - |
| 4-Chloroaniline | 10 | - | - | - | - | - | - | - | - |
| Hexacholorobutadiene | 10 | - | - | - | - | - | - | - | - |
| 4-Chloro-3-Methylphenol | 10 | - | - | - | - | - | - | - | - |
| 2-Methylnaphthalene | 10 | 24 | - | - | - | - | - | 21 | - |
| Hexachlorocyclopentadiene | 10 | - | - | - | - | - | - | - | - |
| 2,4,6-Trichlorophenol | 10 | - | - | - | - | - | - | - | - |
| 2,4,5-Trichlorophenol | 50 | - | - | - | - | - | - | - | - |
| 2-Chloronaphthalene | 10 | - | - | - | - | - | - | - | - |
| 2-Nitroaniline | 50 | - | - | - | - | - | - | - | - |
| Dimethylphthalate | 10 | - | - | - | - | - | - | - | - |
| Acenaphthylene | 10 | - | - | - | - | - | - | - | - |
| 2,6-Dinitrotoluene | 10 | - | - | - | - | - | - | - | - |

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PROJECT: Plattsburgh

MONITORING WELL SAMPLE ANALYSIS - FT-1 Fire Training Area

Summary Table

| SAMPLE ID: | | 01MW309XXX01XD | 01MW310XXX01XX | 01MW311XXX01XX | 01MW312XXX01XX | 01MW313XXX01XX | 01MW314XXX01XX | 01MW315XXX01XX | 01MW316XXX01XX |
|---|---|---|---|---|---|---|---|---|---|
| LAB NUMBER: | | 241656 | 241657 | 240573 | 240457 | 241233 | 241235 | 241658 | 240003 |
| DATE SAMPLED: | | 01/18/89 | 01/18/89 | 01/13/89 | 01/12/89 | 01/17/89 | 01/17/89 | 01/18/89 | 01/12/89 |
| DATE SAMPLE PREP.: | | 01/23/89 | 01/23/89 | 01/17/89 | 01/16/89 | 01/19/89 | 01/19/89 | 01/23/89 | 01/13/89 |
| DATE SAMPLE ANALYZED: | | 01/26/89 | 01/26/89 | 01/25/89 | 01/23/89 | 01/27/89 | 01/27/89 | 01/26/89 | 01/22/89 |
| MATRIX: | | Water | Water | Water | Water | Water | Water | Water | Water |
| SEMI-VOLATILE ORGANIC COMPOUNDS UNITS: ug/L | CRDL | | | | | | | | |
| 3-Nitroaniline | 50 | - | - | - | - | - | - | - | - |
| Acenaphthene | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dinitrophenol | 50 | - | - | - | - | - | - | - | - |
| 4-Nitrophenol | 50 | - | - | - | - | - | - | - | - |
| Dibenzofuran | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dinitrotoluene | 10 | - | - | - | - | - | - | - | - |
| Diethylphthalate | 10 | - | - | - | - | - | - | - | - |
| 4-Chlorophenyl-phenylether | 10 | - | - | - | - | - | - | - | - |
| Fluorene | 10 | - | - | - | - | - | - | - | - |
| 4-Nitroaniline | 50 | - | - | - | - | - | - | - | - |
| 4,6-Dinitro-2-methylphenol | 50 | - | - | - | - | - | - | - | - |
| N-Nitrosodiphenylamine | 10 | - | - | - | - | - | - | - | - |
| 4-Bromophenyl-phenylether | 10 | - | - | - | - | - | - | - | - |
| Hexachlorobenzene | 10 | - | - | - | - | - | - | - | - |
| Pentachlorophenol | 50 | - | - | - | - | - | - | - | - |
| Phenanthrene | 10 | - | - | - | - | - | - | - | - |
| Anthracene | 10 | - | - | - | - | - | - | - | - |
| Di-n-butylphthalate | 10 | - | - | - | - | - | - | - | - |
| Fluoranthene | 10 | - | - | - | - | - | - | - | - |
| Pyrene | 10 | - | - | - | - | - | - | - | - |
| Butylbenzylphthalate | 10 | - | - | - | - | - | - | - | - |
| 3,3'-Dichlorobenzidine | 20 | - | - | - | - | - | - | - | - |
| Benzo(a)Anthracene | 10 | - | - | - | - | - | - | - | - |
| Chrysene | 10 | - | - | - | - | - | - | - | - |
| bis(2-Ethylhexyl)phthalate | 10 | - | - | - | - | - | - | 24 J | - |
| Di-n-octylphthalate | 10 | - | - | - | - | - | - | - | - |
| Benzo(b)Fluoranthene | 10 | - | - | - | - | - | - | - | - |
| Benzo(k)Fluoranthene | 10 | - | - | - | - | - | - | - | - |
| Benzo(a)Pyrene | 10 | - | - | - | - | - | - | - | - |
| Indeno(1,2,3-cd)pyrene | 10 | - | - | - | - | - | - | - | - |
| Dibenz(a,h)anthracene | 10 | - | - | - | - | - | - | - | - |
| Benzo(g,h,i,)perylene | 10 | - | - | - | - | - | - | - | - |
| Dilution Factor | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Laboratory Method Blank | | GH042079C16 | GH042079C16 | GH041088A06 | GH040714A16 | GJ042621C15 | GJ042621C15 | GH042079C16 | GH040519A15 |
| Associated Equipment Blank | | 00SB206XXX02XX | 00SB206XXX02XX | 00SB205XXX02XX* | 00SB203XXX02XX | 00SB205XXX02XX* | 00SB205XXX02XX* | 00SB206XXX02XX | 00SB202XXX02XX* |
| Associated Field Blanks | | 00MH001XXX01XX<br>- | 00MH001XXX01XX<br>- | 00MH001XXX01XX<br>- | 00MH001XXX01XX<br>00DI201XXX02XX | 00MH001XXX01XX<br>- | 00MH001XXX01XX<br>- | 00MH001XXX01XX<br>- | 00MH001XXX01XX<br>00DI201XXX02XX |

* = for analysis

PROJECT: Plattsburgh

MONITORING WELL SAMPLE ANALYSIS - FT-1 Fire Training Area

Summary Table

| SAMPLE ID: | | 01MW317XXX01XX | 01MW318XXX01XX | 01MW319XXX01XX | 01MW319XXX01XD | 01MW336XXX01XX | 01MW337XXX01XX |
|---|---|---|---|---|---|---|---|
| LAB NUMBER: | | 239995 | 241659 | 241663 | 241664 | 241665 | 241672 |
| DATE SAMPLED: | | 1/11/89 | 01/18/89 | 01/18/89 | 01/18/89 | 01/18/89 | 01/18/89 |
| DATE SAMPLE PREP.: | | 1/13/89 | 01/23/89 | 01/23/89 | 01/22/89 | 01/22/89 | 01/22/89 |
| DATE SAMPLE ANALYZED: | | 1/17/89 | 01/26/89 | 01/26/89 | 01/25/89 | 01/25/89 | 01/25/89 |
| MATRIX: | | Water | Water | Water | Water | Water | Water |
| SEMI-VOLATILE ORGANIC COMPOUNDS UNITS: ug/L | CRDL | | | | | | |
| Phenol | 10 | - | - | - | - | - | - |
| bis(2-Chloroethyl)ether | 10 | - | - | - | - | - | - |
| 2-Chlorophenol | 10 | - | - | - | - | - | - |
| 1,3-Dichlorobenzene | 10 | - | - | - | - | - | - |
| 1,4-Dichlorobenzene | 10 | - | - | - | - | - | - |
| Benzyl alcohol | 10 | - | - | - | - | - | - |
| 1,2-Dichlorobenzene | 10 | - | - | - | - | - | - |
| 2-Methylphenol | 10 | - | - | - | - | - | - |
| bis(2-Chloroisopropyl)ether | 10 | - | - | - | - | - | - |
| 4-Methylphenol | 10 | - | - | - | - | - | 32 J |
| N-Nitroso-di-n-propylamine | 10 | - | - | - | - | - | - |
| Hexachloroethane | 10 | - | - | - | - | - | - |
| Nitrobenzene | 10 | - | - | - | - | - | - |
| Isophorone | 10 | - | - | - | - | - | - |
| 2-Nitrophenol | 10 | - | - | - | - | - | - |
| 2,4-Dimethylphenol | 10 | - | - | - | - | - | 16 J |
| Benzoic acid | 50 | R | - | - | - | - | - |
| bis(2-Chloroethoxy)methane | 10 | - | - | - | - | - | - |
| 2,4-Dichlorophenol | 10 | - | - | - | - | - | - |
| 1,2,4-Trichlorobenzene | 10 | - | - | - | - | - | - |
| Naphthalene | 10 | - | - | - | - | - | 48 |
| 4-Chloroaniline | 10 | - | - | - | - | - | - |
| Hexacholorobutadiene | 10 | - | - | - | - | - | - |
| 4-Chloro-3-Methylphenol | 10 | - | - | - | - | - | - |
| 2-Methylnaphthalene | 10 | - | - | - | - | - | 22 |
| Hexachlorocyclopentadiene | 10 | - | - | - | - | - | - |
| 2,4,6-Trichlorophenol | 10 | - | - | - | - | - | - |
| 2,4,5-Trichlorophenol | 50 | - | - | - | - | - | - |
| 2-Chloronaphthalene | 10 | - | - | - | - | - | - |
| 2-Nitroaniline | 50 | - | - | - | - | - | - |
| Dimethylphthalate | 10 | - | - | - | - | - | - |
| Acenaphthylene | 10 | - | - | - | - | - | - |
| 2,6-Dinitrotoluene | 10 | - | - | - | - | - | - |

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PROJECT: Plattsburgh

# MONITORING WELL SAMPLE ANALYSIS - FT-1 Fire Training Area

Summary Table

| SAMPLE ID: | | 01MW317XXX01XX | 01MW318XXX01XX | 01MW319XXX01XX | 01MW319XXX01XD | 01MW336XXX01XX | 01MW337XXX01XX |
|---|---|---|---|---|---|---|---|
| LAB NUMBER: | | 239995 | 241659 | 241663 | 241664 | 241665 | 241672 |
| DATE SAMPLED: | | 1/11/89 | 01/18/89 | 01/18/89 | 01/18/89 | 01/18/89 | 01/18/89 |
| DATE SAMPLE PREP.: | | 1/13/89 | 01/23/89 | 01/23/89 | 01/22/89 | 01/22/89 | 01/22/89 |
| DATE SAMPLE ANALYZED: | | 1/17/89 | 01/26/89 | 01/26/89 | 01/25/89 | 01/25/89 | 01/25/89 |
| MATRIX: | | Water | Water | Water | Water | Water | Water |
| SEMI-VOLATILE ORGANIC COMPOUNDS UNITS: ug/L | CRDL | | | | | | |
| 3-Nitroaniline | 50 | - | - | - | - | - | - |
| Acenaphthene | 10 | - | - | - | - | - | - |
| 2,4-Dinitrophenol | 50 | - | - | - | - | - | - |
| 4-Nitrophenol | 50 | - | - | - | - | - | - |
| Dibenzofuran | 10 | - | - | - | - | - | - |
| 2,4-Dinitrotoluene | 10 | - | - | - | - | - | - |
| Diethylphthalate | 10 | - | - | - | - | - | - |
| 4-Chlorophenyl-phenylether | 10 | - | - | - | - | - | - |
| Fluorene | 10 | - | - | - | - | - | - |
| 4-Nitroaniline | 50 | - | - | - | - | - | - |
| 4,6-Dinitro-2-methylphenol | 50 | - | - | - | - | - | - |
| N-Nitrosodiphenylamine | 10 | - | - | - | - | - | - |
| 4-Bromophenyl-phenylether | 10 | - | - | - | - | - | - |
| Hexachlorobenzene | 10 | - | - | - | - | - | - |
| Pentachlorophenol | 50 | - | - | - | - | - | - |
| Phenanthrene | 10 | - | - | - | - | - | - |
| Anthracene | 10 | - | - | - | - | - | - |
| Di-n-butylphthalate | 10 | - | - | - | - | - | - |
| Fluoranthene | 10 | - | - | - | - | - | - |
| Pyrene | 10 | - | - | - | - | - | - |
| Butylbenzylphthalate | 10 | - | - | - | - | - | - |
| 3,3'-Dichlorobenzidine | 20 | - | - | - | - | - | - |
| Benzo(a)Anthracene | 10 | - | - | - | - | - | - |
| Chrysene | 10 | - | - | - | - | - | - |
| bis(2-Ethylhexyl)phthalate | 10 | 270 J | - | - | - | - | 110 |
| Di-n-octylphthalate | 10 | - | - | - | - | - | - |
| Benzo(b)Fluoranthene | 10 | - | - | - | - | - | - |
| Benzo(k)Fluoranthene | 10 | - | - | - | - | - | - |
| Benzo(a)Pyrene | 10 | - | - | - | - | - | - |
| Indeno(1,2,3-cd)pyrene | 10 | - | - | - | - | - | - |
| Dibenz(a,h)anthracene | 10 | - | - | - | - | - | - |
| Benzo(g,h,i,)perylene | 10 | - | - | - | - | - | - |
| Dilution Factor | | 1 | 1 | 1 | 1 | 1 | 1 |
| Laboratory Method Blank | | GH040243C20 | GH042079C16 | GH042079C16 | GH041933A04 | GH041933A04 | GH041933A04 |
| Associated Equipment Blank | | 00SB202XXX02XX* | 00SB206XXX02XX | 00SB206XXX02XX | 00SB206XXX02XX | 00SB206XXX02XX | 00SB206XXX02XX |
| Associated Field Blanks | | 00MH001XXX01XX 00DI201XXX02XX | 00MH001XXX01XX - | 00MH001XXX01XX - | 00MH001XXX01XX - | 00MH001XXX01XX - | 00MH001XXX01XX - |

* = for analysis

PROJECT: Plattsburgh

MONITORING WELL SAMPLE ANALYSIS - FT-1 Fire Training Area

Summary Table

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | SAMPLE ID: | 01MW101XXX02XX | 01MW102XXX02XX | 01MW103XXX02XX | 01MW104XXX02XX | 01MW105XXX02XX | 01MW106XXX02XX | 01MW107XXX02XX | 01MW126XXX02XX |
| | | LAB NUMBER: | 241256 | 241263 | 241674 | 241255 | 241680 | 241260 | 241265 | 241264 |
| | | DATE SAMPLED: | 1/17/89 | 1/17/89 | 01/18/89 | 1/17/89 | 01/18/89 | 1/17/89 | 1/17/89 | 1/17/89 |
| | | DATE SAMPLE PREP.: | 1/23/89 | 1/23/89 | 01/20/89 | 1/23/89 | 01/20/89 | 1/23/89 | 1/23/89 | 1/23/89 |
| | | DATE SAMPLE ANALYZED: | 1/23/89 | 1/23/89 | 01/25/89 | 1/23/89 | 01/25/89 | 1/23/89 | 1/23/89 | 1/23/89 |
| | | MATRIX: | Water | Water | Water | Water | Water | Water | Water | Water |
| METALS UNITS: ug/L | ANALYTICAL METHOD | CRDL | | | | | | | | |
| Lead | P/F | 5 | - | - | 126 | - | - | - | - | - |
| Laboratory Method Blank | | | 15926C | 15926C | 15926E | 15926C | 15926E | 15926C | 15926C | 15926C |
| Associated Equipment Blank | | | 00SB205XXX02XX | 00SB205XXX02XX | 00SB206XXX02XX | 00SB205XXX02XX | 00SB206XXX02XX | 00SB205XXX02XX | 00SB205XXX02XX | 00SB205XXX02XX |
| Associated Field Blanks | | | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX |
| | | | 00DI201XXX02XX | 00DI201XXX02XX | - | 00DI201XXX02XX | - | 00DI201XXX02XX | 00DI201XXX02XX | 00DI201XXX02XX |

PROJECT: Plattsburgh

MONITORING WELL SAMPLE ANALYSIS - FT-1 Fire Training Area

Summary Table

| | | | 01MW127XXX02XX | 01MW306XXX01XX | 01MW307XXX01XX | 01MW308XXX01XX | 01MW309XXX01XX | 01MW309XXX01XD | 01MW310XXX01XX | 01MW311XXX01XX |
|---|---|---|---|---|---|---|---|---|---|---|
| | | SAMPLE ID: | 01MW127XXX02XX | 01MW306XXX01XX | 01MW307XXX01XX | 01MW308XXX01XX | 01MW309XXX01XX | 01MW309XXX01XD | 01MW310XXX01XX | 01MW311XXX01XX |
| | | LAB NUMBER: | 241683 | 241259 | 241261 | 241262 | 241684 | 241685 | 241686 | 240587 |
| | | DATE SAMPLED: | 01/18/89 | 1/17/89 | 1/17/89 | 1/17/89 | 01/18/89 | 01/18/89 | 01/18/89 | 1/13/89 |
| | | DATE SAMPLE PREP.: | 01/20/89 | 1/23/89 | 1/23/89 | 1/23/89 | 01/20/89 | 01/20/89 | 01/20/89 | 1/23/89 |
| | | DATE SAMPLE ANALYZED: | 01/25/89 | 1/23/89 | 1/23/89 | 1/23/89 | 01/25/89 | 01/25/89 | 01/25/89 | 1/23/89 |
| | | MATRIX: | Water | Water | Water | Water | Water | Water | Water | Water |
| METALS UNITS: ug/L | ANALYTICAL METHOD | CRDL | | | | | | | | |
| Lead | P/F | 5 | - | - | - | - | - | - | - | - |
| Laboratory Method Blank | | | 15926E | 15926C | 15926C | 15926C | 15926E | 15926E | 15926E | 15926C |
| Associated Equipment Blank | | | 00SB206XXX02XX | 00SB205XXX02XX | 00SB205XXX02XX | 00SB205XXX02XX | 00SB206XXX02XX | 00SB206XXX02XX | 00SB206XXX02XX | 00SB204XXX02XX |
| Associated Field Blanks | | | 00MH001XXX01XX<br>- | 00MH001XXX01XX<br>00DI201XXX02XX | 00MH001XXX01XX<br>00DI201XXX02XX | 00MH001XXX01XX<br>00DI201XXX02XX | 00MH001XXX01XX<br>- | 00MH001XXX01XX<br>- | 00MH001XXX01XX<br>- | 00MH001XXX01XX<br>00DI201XXX02XX |

PROJECT: Plattsburgh

# MONITORING WELL SAMPLE ANALYSIS - FT-1 Fire Training Area

Summary Table

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | SAMPLE ID: | 01MW312XXX01XX | 01MW313XXX01XX | 01MW314XXX01XX | 01MW315XXX01XX | 01MW316XXX01XX | 01MW317XXX01XX | 01MW318XXX01XX | 01MW319XXX01XX |
| | | LAB NUMBER: | 240499 | 241257 | 241258 | 241687 | 240045 | 240040 | 241688 | 241689 |
| | | DATE SAMPLED: | 1/12/89 | 1/17/89 | 1/17/89 | 01/18/89 | 1/11/89 | 1/11/89 | 01/18/89 | 01/18/89 |
| | | DATE SAMPLE PREP.: | 1/23/89 | 1/23/89 | 1/23/89 | 01/20/89 | 1/23/89 | 1/23/89 | 01/20/89 | 01/20/89 |
| | | DATE SAMPLE ANALYZED: | 1/23/89 | 1/23/89 | 1/23/89 | 01/25/89 | 1/23/89 | 1/23/89 | 01/25/89 | 01/25/89 |
| | | MATRIX: | Water | Water | Water | Water | Water | Water | Water | Water |
| METALS UNITS: ug/L | ANALYTICAL METHOD | CRDL | | | | | | | | |
| Lead | P/F | 5 | - | - | - | 10 | - | - | - | - |
| Laboratory Method Blank | | | 15926C | 15926C | 15926C | 15926E | 15926C | 15926C | 15926E | 15926E |
| Associated Equipment Blank | | | 00SB203XXX02XX | 00SB205XXX02XX | 00SB205XXX02XX | 00SB206XXX02XX | 00SB202XXX02XX | 00SB202XXX02XX | 00SB206XXX02XX | 00SB206XXX02XX |
| Associated Field Blanks | | | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX |
| | | | 00DI201XXX02XX | 00DI201XXX02XX | 00DI201XXX02XX | - | 00DI201XXX02XX | 00DI201XXX02XX | - | - |

Summary Table

| | | | | |
|---|---|---|---|---|
| | | SAMPLE ID: | 01MW319XXX01XD | 01MW336XXX01XX |
| | | LAB NUMBER: | 241690 | 241691 |
| | | DATE SAMPLED: | 01/18/89 | 01/18/89 |
| | | DATE SAMPLE PREP.: | 01/20/89 | 01/20/89 |
| | | DATE SAMPLE ANALYZED: | 01/25/89 | 01/25/89 |
| | | MATRIX: | Water | Water |
| METALS UNITS: ug/L | ANALYTICAL METHOD | CRDL | | |
| Lead | P/F | 5 | - | - |
| Laboratory Method Blank | | | 15926E | 15926E |
| Associated Equipment Blank | | | 00SB206XXX02XX | 00SB206XXX02XX |
| Associated Field Blanks | | | 00MH001XXX01XX | 00MH001XXX01XX |
| | | | - | - |

Summary Table

| METALS COMPOUNDS UNITS: ug/L | ANALYTICAL METHOD | CRDL | 01MW301XXX01XX | 01MW304XXX01XX | 01MW337XXX01XX |
|---|---|---|---|---|---|
| LAB NUMBER: | | | 241697 | 241698 | 241699 |
| DATE SAMPLED: | | | 01/18/89 | 01/18/89 | 01/18/89 |
| DATE SAMPLE PREP.: | | | 01/24/89 | 01/24/89 | 01/24/89 |
| DATE SAMPLE ANALYZED: | | | 02/02/89 | 02/02/89 | 02/02/89 |
| MATRIX: | | | Water | Water | Water |
| Aluminum | P | 200 | 1650 | - | - |
| Antimony | P | 60 | - | - | - |
| Arsenic | F | 10 | - | 15 | 15 |
| Barium | P | 200 | - | - | - |
| Beryllium | P | 5 | - | - | - |
| Cadmium | P | 5 | - | - | - |
| Calcium | P | 5000 | 49200 | 65300 | 98400 |
| Chromium | P | 10 | 16 | - | - |
| Cobalt | P | 50 | - | - | - |
| Copper | P | 25 | - | - | - |
| Iron | P | 100 | 2670 | 15700 | 20800 |
| Lead | P/F | 5 | - | - | - |
| Magnesium | P | 5000 | 19600 J | 11200 J | 16300 J |
| Manganese | P | 15 | 87 | 69 | 79 |
| Mercury | CV | 0.20 | - | - | - |
| Nickel | P | 40 | - | - | - |
| Potassium | P | 5000 | - | 7470 | - |
| Selenium | F | 5 | R | R | R |
| Silver | P | 10 | - | - | - |
| Sodium | P | 5000 | 20900 | 10700 | 6420 |
| Thallium | F | 10 | - | - | - |
| Vanadium | P | 50 | - | - | - |
| Zinc | P | 20 | - | 77 JB | 151 |
| Laboratory Method Blank | | | 15926E | 15926E | 15926E |
| Associated Equipment Blank | | | 00SB206XXX02XX | 00SB206XXX02XX | 00SB206XXX02XX |
| Associated Field Blank | | | 00MH001XXX01XX | 00MH001XXX01XX | 00MH001XXX01XX |

PROJECT: Plattsburgh

MONITORING WELL SAMPLE ANALYSIS - FT-1 Fire Training Area

Summary Table

| | | | |
|---|---|---|---|
| SAMPLE ID: | | 01MW108XXX02XX | 01MW305XXX01XX |
| LAB NUMBER: | | 241882 | 241880 |
| DATE SAMPLED: | | 01/19/89 | 01/19/89 |
| DATE SAMPLE PREP.: | | 01/25/89 | 01/24/89 |
| DATE SAMPLE ANALYZED: | | 01/25/89 | 01/24/89 |
| MATRIX: | | Product * | Product * |
| VOLATILE ORGANIC COMPOUNDS UNITS: ug/kg | CRDL | | |
| Chloromethane | 10 | - | - |
| Bromomethane | 10 | - | - |
| Vinyl Chloride | 10 | - | - |
| Chloroethane | 10 | - | - |
| Methylene Chloride | 5 | - | - |
| Acetone | 10 | - | - |
| Carbon Disulfide | 5 | - | - |
| 1,1-Dichloroethene | 5 | - | - |
| 1,1-Dichloroethane | 5 | - | - |
| 1,2-Dichloroethene (total) | 5 | 840000 | 390000 |
| Chloroform | 5 | - | - |
| 1,2-Dichloroethane | 5 | - | - |
| 2-Butanone | 10 | R | R |
| 1,1,1-Trichloroethane | 5 | - | - |
| Carbon Tetrachloride | 5 | - | - |
| Vinyl Acetate | 10 | - | - |
| Bromodichloromethane | 5 | - | - |
| 1,2-Dichloropropane | 5 | - | - |
| cis-1,3-Dichloropropene | 5 | - | - |
| Trichloroethene | 5 | 11000000 | 8000000 D |
| Dibromochloromethane | 5 | - | - |
| 1,1,2-Trichloroethane | 5 | - | - |
| Benzene | 5 | - | 210000 |
| Trans-1,3-Dichloropropene | 5 | - | - |
| Bromoform | 5 | - | - |
| 4-Methyl-2-Pentanone | 10 | - | - |
| 2-Hexanone | 10 | - | - |
| Tetrachloroethene | 5 | - | - |
| 1,1,2,2-Tetrachloroethane | 5 | - | - |
| Toluene | 5 | 1800000 | 3000000 D |
| Chlorobenzene | 5 | - | - |
| Ethylbenzene | 5 | 1000000 | 1800000 D |
| Styrene | 5 | - | - |
| Xylenes (Total) | 5 | 4600000 | 8000000 D |
| Dilution Factor | | 770 | 20 |
| Laboratory Method Blank | | CB890125A12 | CN04227BB12 |
| Associated Equipment Blank | | 00SB207XXX02XX** | 00SB207XXX02XX** |
| Associated Trip Blank | | 00BT107XXX02XX | 00BT107XXX02XX |

* jium level analysis. ** = Held for analysis.

Summary Table

| SAMPLE ID: | | 01MW108XXX02XX | 01MW305XXX01XX |
|---|---|---|---|
| LAB NUMBER: | | 241882 | 241880 |
| DATE SAMPLED: | | 01/19/89 | 01/19/89 |
| DATE SAMPLE PREP.: | | 01/25/89 | 01/25/89 |
| DATE SAMPLE ANALYZED: | | 01/31/89 | 01/30/89 |
| MATRIX: | | Product ** | Product ** |
| SEMI-VOLATILE ORGANIC COMPOUNDS UNITS: ug/kg | CRDL | | |
| Phenol | 330 | - | - |
| bis(2-Chloroethyl)ether | 330 | - | - |
| 2-Chlorophenol | 330 | - | - |
| 1,3-Dichlorobenzene | 330 | - | - |
| 1,4-Dichlorobenzene | 330 | 290000 | - |
| Benzyl alcohol | 330 | - | - |
| 1,2-Dichlorobenzene | 330 | 1300000 | 250000 |
| 2-Methylphenol | 330 | - | - |
| bis(2-Chloroisopropyl)ether | 330 | - | - |
| 4-Methylphenol | 330 | - | - |
| N-Nitroso-di-n-propylamine | 330 | - | - |
| Hexachloroethane | 330 | - | - |
| Nitrobenzene | 330 | - | - |
| Isophorone | 330 | - | - |
| 2-Nitrophenol | 330 | - | - |
| 2,4-Dimethylphenol | 330 | - | - |
| Benzoic acid | 1600 | - | - |
| bis(2-Chloroethoxy)methane | 330 | - | - |
| 2,4-Dichlorophenol | 330 | - | - |
| 1,2,4-Trichlorobenzene | 330 | - | - |
| Naphthalene | 330 | 1200000 | 1100000 |
| 4-Chloroaniline | 330 | - | - |
| Hexacholorobutadiene | 330 | - | - |
| 4-Chloro-3-Methylphenol | 330 | - | - |
| 2-Methylnaphthalene | 330 | 2000000 | 1800000 |
| Hexachlorocyclopentadiene | 330 | - | - |
| 2,4,6-Trichlorophenol | 330 | - | - |
| 2,4,5-Trichlorophenol | 1600 | - | - |
| 2-Chloronaphthalene | 330 | - | - |
| 2-Nitroaniline | 1600 | - | - |
| Dimethylphthalate | 330 | - | - |
| Acenaphthylene | 330 | - | - |
| 2,6-Dinitrotoluene | 330 | - | - |

* = Held for analysis, ** = Medium level analysis.

Summary Table

| | | | |
|---|---|---|---|
| SAMPLE ID: | | 01MW108XXX02XX | 01MW305XXX01XX |
| LAB NUMBER: | | 241882 | 241880 |
| DATE SAMPLED: | | 01/19/89 | 01/19/89 |
| DATE SAMPLE PREP.: | | 01/25/89 | 01/25/89 |
| DATE SAMPLE ANALYZED: | | 01/31/89 | 01/30/89 |
| MATRIX: | | Product ** | Product ** |
| SEMI-VOLATILE ORGANIC COMPOUNDS UNITS: ug/kg | CRDL | | |
| 3-Nitroaniline | 1600 | - | - |
| Acenaphthene | 330 | - | - |
| 2,4-Dinitrophenol | 1600 | - | - |
| 4-Nitrophenol | 1600 | - | - |
| Dibenzofuran | 330 | - | - |
| 2,4-Dinitrotoluene | 330 | - | - |
| Diethylphthalate | 330 | - | R |
| 4-Chlorophenyl-phenylether | 330 | - | - |
| Fluorene | 330 | - | - |
| 4-Nitroaniline | 1600 | - | - |
| 4,6-Dinitro-2-methylphenol | 1600 | - | - |
| N-Nitrosodiphenylamine | 330 | - | - |
| 4-Bromophenyl-phenylether | 330 | - | - |
| Hexachlorobenzene | 330 | - | - |
| Pentachlorophenol | 1600 | - | - |
| Phenanthrene | 330 | - | - |
| Anthracene | 330 | - | - |
| Di-n-butylphthalate | 330 | - | - |
| Fluoranthene | 330 | - | - |
| Pyrene | 330 | - | - |
| Butylbenzylphthalate | 330 | - | - |
| 3,3'-Dichlorobenzidine | 660 | - | - |
| Benzo(a)Anthracene | 330 | - | - |
| Chrysene | 330 | - | - |
| bis(2-Ethylhexyl)phthalate | 330 | - | - |
| Di-n-octylphthalate | 330 | - | - |
| Benzo(b)Fluoranthene | 330 | - | - |
| Benzo(k)Fluoranthene | 330 | - | - |
| Benzo(a)Pyrene | 330 | - | - |
| Indeno(1,2,3-cd)pyrene | 330 | - | - |
| Dibenz(a,h)anthracene | 330 | - | - |
| Benzo(g,h,i,)perylene | 330 | - | - |
| Dilution Factor | | 10 | 10 |
| Laboratory Method Blank | | G2J42321A04 | G2J42321A04 |
| Associated Equipment Blank | | 00SB207XXX02XX* | 00SB207XXX02XX* |

* = H 'or analysis, ** = Medium level analysis.

Summary Table

| | | | | |
|---|---|---|---|---|
| | | SAMPLE ID: | 01MW108XXX02XX | 01MW305XXX01XX |
| | | LAB NUMBER: | 241888 | 241886 |
| | | DATE SAMPLED: | 01/19/89 | 01/19/89 |
| | | DATE SAMPLE PREP.: | 01/30/89 | 01/30/89 |
| | | DATE SAMPLE ANALYZED: | 02/01/89 | 02/01/89 |
| | | MATRIX: | Product | Product |
| METALS UNITS: mg/kg | ANALYTICAL METHOD | CRDL | | |
| Aluminum | P | 40 | - | - |
| Antimony | P | 12 | - | - |
| Arsenic | F | 2 | - | - |
| Barium | P | 40 | - | - |
| Beryllium | P | 1 | - | - |
| Cadmium | P | 1 | - | - |
| Calcium | P | 1000 | - | - |
| Chromium | P | 2 | - | - |
| Cobalt | P | 10 | - | - |
| Copper | P | 5 | - | - |
| Iron | P | 20 | 117 J | 200 J |
| Lead | P/F | 1 | 629 | 587 |
| Magnesium | P | 1000 | - | - |
| Manganese | P | 3 | - | - |
| Mercury | CV | 0.1 | - | - |
| Nickel | P | 8 | - | - |
| Potassium | P | 1000 | - | - |
| Selenium | F | 1 | R | R |
| Silver | P | 2 | - | - |
| Sodium | P | 1000 | - | - |
| Thallium | F | 2 | - | - |
| Vanadium | P | 10 | - | - |
| Zinc | P | 4 | 207 J | 47 J |
| Percent Solids | | | 28 | 22 |
| Laboratory Method Blank | | | 15905C | 15905C |
| Associated Equipment Blank | | | 00SB207XXX02XX | 00SB207XXX02XX |
| Associated Field Blank | | | 00MH001XXX01XX | 00MH001XXX01XX |

PROJECT: Plattsburgh

# FT-1 Site - Volatile Aqueous Analysis (ug/L)

Summary Table

| SAMPLE LOCATION: | | MW-138 | MW-308 | MW-309 | MW-310 | MW-311 | MW-312 | MW-313 | MW-336 |
|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID: | | 01MW13802202XX | 01MW30803002XX | 01MW30902002XX | 01MW31002702XX | 01MW31101002XX | 01MW31201602XX | 01MW31303502XX | 01MW33603502XX |
| LAB NUMBER: | | 267483 | 267491 | 267492 | 267493 | 267519 | 267518 | 267490 | 267497 |
| DATE SAMPLED: | | 6/12/89 | 6/13/89 | 6/13/89 | 6/13/89 | 6/13/89 | 6/13/89 | 6/12/89 | 6/13/89 |
| DATE ANALYZED: | | 6/16/89 | 6/16/89 | 6/19/89 | 6/19/89 | 6/19/89 | 6/19/89 | 6/16/89 | 6/16/89 |
| **ANALYTE** | **CRQL** | | | | | | | | |
| Chloromethane | 10 | - | - | - | - | - | - | - | - |
| Bromomethane | 10 | - | - | - | - | - | - | - | - |
| Vinyl Chloride | 10 | - | - | - | - | - | - | - | - |
| Chloroethane | 10 | - | - | - | - | - | - | - | - |
| Methylene Chloride | 5 | - | - | - | - | - | - | - | - |
| Acetone | 10 | - | - | - | - | - | - | - | - |
| Carbon Disulfide | 5 | - | - | - | - | - | - | - | - |
| 1,1-Dichloroethene | 5 | - | - | - | - | - | - | - | - |
| 1,1-Dichloroethane | 5 | - | - | - | - | - | - | - | - |
| 1,2-Dichloroethene (total) | 5 | - | 290 D | 5600 | 8500 | 46 | 22 | - | 190 |
| Chloroform | 5 | - | - | - | - | - | - | - | - |
| 1,2-Dichloroethane | 5 | - | - | - | - | - | - | - | - |
| 2-Butanone | 10 | 32 | - | - | - | R | - | - | 28 J |
| 1,1,1-Trichloroethane | 5 | - | - | - | - | - | - | - | - |
| Carbon Tetrachloride | 5 | - | - | - | - | - | - | - | - |
| Vinyl Acetate | 10 | - | - | - | - | - | - | - | - |
| Bromodichloromethane | 5 | - | - | - | - | - | - | - | - |
| 1,2-Dichloropropane | 5 | - | - | - | - | - | - | - | - |
| Cis-1,3-Dichloropropene | 5 | - | - | - | - | - | - | - | - |
| Trichloroethene | 5 | - | - | - | - | 14 | 10 | 30 | 110 |
| Dibromochloromethane | 5 | - | - | - | - | - | - | - | - |
| 1,1,2-Trichloroethane | 5 | - | - | - | - | - | - | - | - |
| Benzene | 5 | - | 43 | 420 | 510 | - | - | - | 19 |
| Trans-1,3-Dichloropropene | 5 | - | - | - | - | - | - | - | - |
| Bromoform | 5 | - | - | - | - | - | - | - | - |
| 4-Methyl-2-Pentanone | 10 | - | - | - | - | - | - | - | - |
| 2-Hexanone | 10 | - | - | - | - | - | - | - | - |
| Tetrachloroethene | 5 | - | - | - | - | - | - | - | - |
| 1,1,2,2-Tetrachloroethane | 5 | - | - | - | - | - | - | - | - |
| Toluene | 5 | 6 | - | 260 | 520 | - | - | - | - |
| Chlorobenzene | 5 | - | - | - | - | - | - | - | - |
| Ethylbenzene | 5 | - | 150 | 440 | 340 | - | - | - | - |
| Styrene | 5 | - | - | - | - | - | - | - | - |
| Xylenes (Total) | 5 | 5 | 91 | 1600 | 1300 | - | - | - | - |
| Acrolein | 20 | | | | | R | - | | |
| Acrylonitrile | 26 | | | | | - | - | | |
| Dilution Factor: | | 1 | 1 | 40 | 56 | 1 | 1 | 1 | 1 |
| Associated Method Blank: | | CB890616A19 | CB890616A19 | CB890618B19 | CB890618B19 | CB890618B11 | CB890618B11 | CB890616A19 | CB890616A19 |
| Associated Equipment Blank: | | 00SB06128901 | 00SB06138902* | 00SB06138902* | 00SB06138902* | 00SB06138902* | 00SB06138902* | 00SB06128901 | 00SB06138902* |
| Associated Trip Blank: | | 00TB06128902 | 00TB06128902 | 00TB06128902 | 00TB06128902 | 00TB06128902 | 00TB06128902 | 00TB06128902 | 00TB06128902 |
| Associated Field Blank: | | 00DI06138901 | 00DI06138901 | 00DI06138901 | 00DI06138901 | 00DI06138901 | 00DI06138901 | 00DI06138901 | 00DI06138901 |
| | | 00MH06138901 | 00MH06138901 | 00MH06138901 | 00MH06138901 | | | 00MH06138901 | 00MH06138901 |

* = for analysis.

Summary Table

| | | |
|---|---|---|
| | SAMPLE LOCATION: | MW-336 DUP |
| | SAMPLE ID: | 01MW33603502DX |
| | LAB NUMBER: | 267494 |
| | DATE SAMPLED: | 6/13/89 |
| | DATE ANALYZED: | 6/19/89 |
| **ANALYTE** | **CRQL** | |
| Chloromethane | 10 | - |
| Bromomethane | 10 | - |
| Vinyl Chloride | 10 | - |
| Chloroethane | 10 | - |
| Methylene Chloride | 5 | - |
| Acetone | 10 | - |
| Carbon Disulfide | 5 | - |
| 1,1-Dichloroethene | 5 | - |
| 1,1-Dichloroethane | 5 | - |
| 1,2-Dichloroethene (total) | 5 | 220 |
| Chloroform | 5 | - |
| 1,2-Dichloroethane | 5 | - |
| 2-Butanone | 10 | - |
| 1,1,1-Trichloroethane | 5 | - |
| Carbon Tetrachloride | 5 | - |
| Vinyl Acetate | 10 | - |
| Bromodichloromethane | 5 | - |
| 1,2-Dichloropropane | 5 | - |
| Cis-1,3-Dichloropropene | 5 | - |
| Trichloroethene | 5 | 140 |
| Dibromochloromethane | 5 | - |
| 1,1,2-Trichloroethane | 5 | - |
| Benzene | 5 | 16 |
| Trans-1,3-Dichloropropene | 5 | - |
| Bromoform | 5 | - |
| 4-Methyl-2-Pentanone | 10 | - |
| 2-Hexanone | 10 | - |
| Tetrachloroethene | 5 | - |
| 1,1,2,2-Tetrachloroethane | 5 | - |
| Toluene | 5 | - |
| Chlorobenzene | 5 | - |
| Ethylbenzene | 5 | - |
| Styrene | 5 | - |
| Xylenes (Total) | 5 | - |
| Acrolein | 20 | |
| Acrylonitrile | 26 | |

==================================================

Dilution Factor: 1.5

Associated Method Blank: CB890618B19
Associated Equipment Blank: 00SB06138902*
Associated Trip Blank: 00TB06128902
Associated Field Blank: 00DI06138901
00MH06138901

* = Held for analysis.

PROJECT: Plattsburgh

FT-1 Site - Semivolatile Aqueous Analysis (ug/L)

Summary Table

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | SAMPLE LOCATION: | MW-138 | MW-308 | MW-309 | MW-310 | MW-313 | MW-336 | MW-336 DUP |
| | SAMPLE ID: | 01MW13802202XX | 01MW30803002XX | 01MW30902002XX | 01MW31002702XX | 01MW31303502XX | 01MW33603502XX | 01MW33603502DX |
| | LAB NUMBER: | 267483 | 267491 | 267492 | 267493 | 267490 | 267497 | 267494 |
| | DATE SAMPLED: | 6/12/89 | 6/13/89 | 6/13/89 | 6/13/89 | 6/12/89 | 6/13/89 | 6/13/89 |
| | DATE EXTRACTED: | 6/15/89 | 6/20/89 | 6/15/89 | 6/15/89 | 6/15/89 | 6/15/89 | 6/15/89 |
| | DATE ANALYZED: | 6/16/89 | 6/21/89 | 6/16/89 | 6/17/89 | 6/16/89 | 6/16/89 | 6/17/89 |
| ANALYTE | CRQL | | | | | | | |
| Phenol | 10 | - | - | - | 15 | - | - | - |
| bis(2-Chloroethyl)ether | 10 | - | - | - | - | - | - | - |
| 2-Chlorophenol | 10 | - | - | - | - | - | - | - |
| 1,3-Dichlorobenzene | 10 | - | - | - | - | - | - | - |
| 1,4-Dichlorobenzene | 10 | - | - | - | - | - | - | - |
| Benzyl alcohol | 10 | - | - | - | - | - | - | - |
| 1,2-Dichlorobenzene | 10 | - | - | - | - | - | - | - |
| 2-Methylphenol | 10 | - | - | - | 18 J | - | - | - |
| bis(2-Chloroisopropyl)ether | 10 | - | - | - | - | - | - | - |
| 4-Methylphenol | 10 | - | - | 52 J | 120 J | - | - | - |
| N-Nitroso-di-n-propylamine | 10 | - | - | - | - | - | - | - |
| Hexachloroethane | 10 | - | - | - | - | - | - | - |
| Nitrobenzene | 10 | - | - | - | - | - | - | - |
| Isophorone | 10 | - | - | - | - | - | - | - |
| 2-Nitrophenol | 10 | - | - | - | - | - | - | - |
| 2,4-Dimethylphenol | 10 | - | - | 32 | 45 | - | - | - |
| Benzoic acid | 50 | - | - | - | - | - | - | - |
| bis(2-Chloroethoxy)methane | 10 | - | - | - | - | - | - | - |
| 2,4-Dichlorophenol | 10 | - | - | - | - | - | - | - |
| 1,2,4-Trichlorobenzene | 10 | - | - | - | - | - | - | - |
| Naphthalene | 10 | - | - | 72 | 53 | - | - | - |
| 4-Chloroaniline | 10 | - | - | - | - | - | - | - |
| Hexacholorobutadiene | 10 | - | - | - | - | - | - | - |
| 4-Chloro-3-Methylphenol | 10 | - | - | - | - | - | - | - |
| 2-Methylnaphthalene | 10 | - | 15 | 34 | 37 | - | - | - |
| Hexachlorocyclopentadiene | 10 | - | - | - | - | - | - | - |
| 2,4,6-Trichlorophenol | 10 | - | - | - | - | - | - | - |
| 2,4,5-Trichlorophenol | 50 | - | - | - | - | - | - | - |
| 2-Chloronaphthalene | 10 | - | - | - | - | - | - | - |
| 2-Nitroaniline | 50 | - | - | - | - | - | - | - |
| Dimethylphthalate | 10 | - | - | - | - | - | - | - |
| Acenaphthylene | 10 | - | - | - | - | - | - | - |
| 2,6-Dinitrotoluene | 10 | - | - | - | - | - | - | - |

* = for analysis.

PROJECT: Plattsburgh

FT-1 Site - Semivolatile Aqueous Analysis (ug/L)

Summary Table

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| SAMPLE LOCATION: | | MW-138 | MW-308 | MW-309 | MW-310 | MW-313 | MW-336 | MW-336 DUP |
| SAMPLE ID: | | 01MW13802202XX | 01MW30803002XX | 01MW30902002XX | 01MW31002702XX | 01MW31303502XX | 01MW33603502XX | 01MW33603502DX |
| LAB NUMBER: | | 267483 | 267491 | 267492 | 267493 | 267490 | 267497 | 267494 |
| DATE SAMPLED: | | 6/12/89 | 6/13/89 | 6/13/89 | 6/13/89 | 6/12/89 | 6/13/89 | 6/13/89 |
| DATE EXTRACTED: | | 6/15/89 | 6/20/89 | 6/15/89 | 6/15/89 | 6/15/89 | 6/15/89 | 6/15/89 |
| DATE ANALYZED: | | 6/16/89 | 6/21/89 | 6/16/89 | 6/17/89 | 6/16/89 | 6/16/89 | 6/17/89 |
| ANALYTE | CRQL | | | | | | | |
| 3-Nitroaniline | 50 | - | - | - | - | - | - | - |
| Acenaphthene | 10 | - | - | - | - | - | - | - |
| 2,4-Dinitrophenol | 50 | - | - | - | - | - | - | - |
| 4-Nitrophenol | 50 | - | - | - | - | - | - | - |
| Dibenzofuran | 10 | - | - | - | - | - | - | - |
| 2,4-Dinitrotoluene | 10 | - | - | - | - | - | - | - |
| Diethylphthalate | 10 | - | - | - | - | - | - | - |
| 4-Chlorophenyl-phenylether | 10 | - | - | - | - | - | - | - |
| Fluorene | 10 | - | - | - | - | - | - | - |
| 4-Nitroaniline | 50 | - | - | - | - | - | - | - |
| 4,6-Dinitro-2-methylphenol | 50 | - | - | - | - | - | - | - |
| N-Nitrosodiphenylamine | 10 | - | - | - | - | - | - | - |
| 4-Bromophenyl-phenylether | 10 | - | - | - | - | - | - | - |
| Hexachlorobenzene | 10 | - | - | - | - | - | - | - |
| Pentachlorophenol | 50 | - | - | - | - | - | - | - |
| Phenanthrene | 10 | - | - | - | - | - | - | - |
| Anthracene | 10 | - | - | - | - | - | - | - |
| Di-n-butylphthalate | 10 | - | - | - | - | - | - | - |
| Fluoranthene | 10 | - | - | - | - | - | - | - |
| Pyrene | 10 | - | - | - | - | - | - | - |
| Butylbenzylphthalate | 10 | - | - | - | - | - | - | - |
| 3,3'-Dichlorobenzidine | 20 | - | - | - | - | - | - | - |
| Benzo(a)Anthracene | 10 | - | - | - | - | - | - | - |
| Chrysene | 10 | - | - | - | - | - | - | - |
| bis(2-Ethylhexyl)phthalate | 10 | 12 | - | 16 | 11 | 11 | - | - |
| Di-n-octylphthalate | 10 | - | - | - | - | - | - | - |
| Benzo(b)Fluoranthene | 10 | - | - | - | - | - | - | - |
| Benzo(k)Fluoranthene | 10 | - | - | - | - | - | - | - |
| Benzo(a)Pyrene | 10 | - | - | - | - | - | - | - |
| Indeno(1,2,3-cd)pyrene | 10 | - | - | - | - | - | - | - |
| Dibenz(a,h)anthracene | 10 | - | - | - | - | - | - | - |
| Benzo(g,h,i,)perylene | 10 | - | - | - | - | - | - | - |
| Dilution Factor: | | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Associated Method Blank: | | GH067847A15 | GH068460A22 | GH067847A15 | GH067847A15 | GH067847A15 | GH067847A15 | GH067847A15 |
| Associated Equipment Blank: | | 00SB06128901 | 00SB06138902* | 00SB06138902* | 00SB06138902* | 00SB06128901 | 00SB06138902* | 00SB06138902* |
| Associated Field Blank: | | 00DI06138901 | 00DI06138901 | 00DI06138901 | 00DI06138901 | 00DI06138901 | 00DI06138901 | 00DI06138901 |
| | | 00MH06138901 | 00MH06138901 | 00MH06138901 | 00MH06138901 | 00MH06138901 | 00MH06138901 | 00MH06138901 |

* = Held for analysis.

# PHASE II REMEDIAL INVESTIGATION
# (FALL 1990 - WINTER 1991)

Summary Table

| LOCATION: | | B-02-014 | B-02-014 | B-02-015 | B-02-016 | B-02-017 | B-02-019 | B-02-020 | MW-02-034 |
|---|---|---|---|---|---|---|---|---|---|
| ISIS ID: | | 02BW01404201DX | 02BW01404201XX | 02BW01504201XX | 02BW01604201XX | 02BW01704201XX | 02BW01904501XX | 02BW02005501XX | 02MW03404701XX |
| LAB NUMBER: | | 40569 | 40570 | 40586 | 40674 | 40677 | 39815 | 39814 | 40650 |
| DATE SAMPLED: | | 12/17/90 | 12/17/90 | 12/18/90 | 12/19/90 | 12/19/90 | 12/10/90 | 12/09/90 | 12/18/90 |
| DATE ANALYZED: | | 12/28/90 | 12/28/90 | 12/29/90 | 12/29/90 | 12/29/90 | 12/18/90 | 12/18/90 | 12/28/90 |
| ANALYTE SOW-02/88 | CRQL | | | | | | | | |
| Chloromethane | 10 | - | - | - | - | - | - | - | - |
| Bromomethane | 10 | - | - | - | - | - | - | - | - |
| Vinyl Chloride | 10 | - | - | - | - | - | - | - | - |
| Chloroethane | 10 | - | - | - | - | - | - | - | - |
| Methylene Chloride | 5 | - | 20 | - | - | - | - | - | - |
| Acetone | 10 | - | 19 | - | - | - | - | - | - |
| Carbon Disulfide | 5 | - | - | - | - | - | - | - | - |
| 1,1-Dichloroethene | 5 | - | - | - | - | - | - | - | - |
| 1,1-Dichloroethane | 5 | - | - | - | - | - | - | - | - |
| 1,2-Dichloroethene (total) | 5 | - | - | - | - | - | 46 | 2600 | - |
| Chloroform | 5 | - | - | - | - | - | - | - | - |
| 1,2-Dichloroethane | 5 | - | - | - | - | - | - | - | - |
| 2-Butanone | 10 | - | - | - | - | - | - | - | - |
| 1,1,1-Trichloroethane | 5 | - | - | - | - | - | - | - | - |
| Carbon Tetrachloride | 5 | - | - | - | - | - | - | - | - |
| Vinyl Acetate | 10 | - | - | - | - | - | - | - | - |
| Bromodichloromethane | 5 | - | - | - | - | - | - | - | - |
| 1,2-Dichloropropane | 5 | - | - | - | - | - | - | - | - |
| cis-1,3-Dichloropropene | 5 | - | - | - | - | - | - | - | - |
| Trichloroethene | 5 | - | - | - | - | - | - | 2000 | - |
| Dibromochloromethane | 5 | - | - | - | - | - | - | - | - |
| 1,1,2-Trichloroethane | 5 | - | - | - | - | - | - | - | - |
| Benzene | 5 | - | - | - | - | - | - | - | - |
| trans-1,3-Dichloropropene | 5 | - | - | - | - | - | - | - | - |
| Bromoform | 5 | - | - | - | - | - | - | - | - |
| 4-Methyl-2-Pentanone | 10 | - | - | - | - | - | - | - | - |
| 2-Hexanone | 10 | - | - | - | - | - | - | - | - |
| Tetrachloroethene | 5 | - | - | - | - | - | - | - | - |
| 1,1,2,2-Tetrachloroethane | 5 | - | - | - | - | - | - | - | - |
| Toluene | 5 | - | - | - | - | - | 29 | 1400 | - |
| Chlorobenzene | 5 | - | - | - | - | - | - | - | - |
| Ethylbenzene | 5 | - | - | - | - | - | 36 | 980 | 32 X |
| Styrene | 5 | - | - | - | - | - | - | - | - |
| Total Xylenes | 5 | - | - | - | - | - | 170 | 4800 | 89 |
| Dilution Factor: | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 100 | 5.00 |
| Associated Method Blank: | | VBLK53 | VBLK53 | Y5617 | Y5617 | Y5617 | V6990 | V6990 | Y7190 |
| Associated Equipment Blank: | | - | - | 00QS00700001XX | 00QS00700001XX | 00QS00700001XX | - | - | 00QS00700001XX |
| Associated Field Blank: | | a | a | a | a | a | a | a | - |
| Associated Trip Blank: | | 00QT00600001XX | 00QT00600001XX | 00QT00700001XX | 00QT00800001XX | 00QT00800001XX | 00QT00400001XX | 00QT00400001XX | 00QT00700001XX |

SITE: FIRE TRAINING AREA

Summary Table

| ANALYTE | CRQL | 02MW033XXX01XD | 02MW033XXX01XX | 02MW034XXX01XX | 02MW035XXX01XX | 02MW036XXX01XX |
|---|---|---|---|---|---|---|
| LAB NUMBER: | | 42733 # | 42732 # | 42729 # | 42730 # | 42731 # |
| DATE SAMPLED: | | 01/29/91 | 01/29/91 | 01/29/91 | 01/29/91 | 01/29/91 |
| DATE ANALYZED: | | 02/05/91 | 02/04/91 | 02/05/91 | 02/05/91 | 02/08/91 |
| Chloromethane | 10 | - | - | - | - | - |
| Bromomethane | 10 | - | - | - | - | - |
| Vinyl Chloride | 10 | - | - | - | - | - |
| Chloroethane | 10 | - | - | - | - | - |
| Methylene Chloride | 5 | - | - | - | - | - |
| Acetone | 10 | - | - | - | - | - |
| Carbon Disulfide | 5 | - | - | - | - | - |
| 1,1-Dichloroethene | 5 | - | - | - | - | - |
| 1,1-Dichloroethane | 5 | - | - | - | - | - |
| 1,2-Dichloroethene (total) | 5 | 23 | 28 | - | - | - |
| Chloroform | 5 | - | - | - | - | - |
| 1,2-Dichloroethane | 5 | - | - | - | - | - |
| 2-Butanone | 10 | R | R | R | R | - |
| 1,1,1-Trichloroethane | 5 | - | - | - | - | - |
| Carbon Tetrachloride | 5 | - | - | - | - | - |
| Vinyl Acetate | 10 | - | - | - | - | - |
| Bromodichloromethane | 5 | - | - | - | - | - |
| 1,2-Dichloropropane | 5 | - | - | - | - | - |
| cis-1,3-Dichloropropene | 5 | - | - | - | - | - |
| Trichloroethene | 5 | 31 | 37 | - | - | - |
| Dibromochloromethane | 5 | - | - | - | - | - |
| 1,1,2-Trichloroethane | 5 | - | - | - | - | - |
| Benzene | 5 | - | - | - | - | - |
| trans-1,3-Dichloropropene | 5 | - | - | - | - | - |
| Bromoform | 5 | - | - | - | - | - |
| 4-Methyl-2-Pentanone | 10 | - | - | - | - | - |
| 2-Hexanone | 10 | - | - | - | - | - |
| Tetrachloroethene | 5 | - | - | - | - | - |
| 1,1,2,2-Tetrachloroethane | 5 | - | - | - | - | - |
| Toluene | 5 | 23 | 26 | - | - | 15 |
| Chlorobenzene | 5 | - | - | - | - | - |
| Ethylbenzene | 5 | 14 | 16 | - | - | - |
| Styrene | 5 | - | - | - | - | - |
| Total Xylenes | 5 | 89 | 95 | - | - | 42 |
| Dilution Factor: | | 2.0 | 1.0 | 2.0 | 2.0 | 1.0 |

| | 02MW033XXX01XD | 02MW033XXX01XX | 02MW034XXX01XX | 02MW035XXX01XX | 02MW036XXX01XX |
|---|---|---|---|---|---|
| Associated Method Blank: | U6951 | U6951 | U6951 | U6951 | U6951 |
| Associated Equipment Blank: | 00QSXX1XXX01XX | 00QSXX1XXX01XX | 00QSXX1XXX01XX | 00QSXX1XXX01XX | 00QSXX1XXX01XX |
| Associated Field Blank: | - | - | - | - | - |
| Associated Trip Blank: | 00QTXX1XXX01XX | 00QTXX1XXX01XX | 00QTXX1XXX01XX | 00QTXX1XXX01XX | 00QTXX1XXX01XX |

Box Number: 6091-224
#: Level D validation

Semivolatile Organic Aqueous Analysis (ug/L)

Summary Table

| ANALYTE | CRQL | 02MW033XXX01XD | 02MW033XXX01XX | 02MW034XXX01XX | 02MW035XXX01XX | 02MW036XXX01XX |
|---|---|---|---|---|---|---|
| LAB NUMBER: | | 42739 # | 42738 # | 42735 # | 42736 # | 42737 # |
| DATE SAMPLED: | | 01/29/91 | 01/29/91 | 01/29/91 | 01/29/91 | 01/29/91 |
| DATE EXTRACTED: | | 01/31/91 | 01/31/91 | 01/31/91 | 01/31/91 | 01/31/91 |
| DATE ANALYZED: | | 02/13/91 | 02/13/91 | 02/12/91 | 02/13/91 | 02/13/91 |
| 3-Nitroaniline | 50 | - | - | - | - | - |
| Acenaphthene | 10 | - | - | - | - | - |
| 2,4-Dinitrophenol | 50 | - | - | - | - | - |
| 4-Nitrophenol | 50 | - | - | - | - | - |
| Dibenzofuran | 10 | - | - | - | - | - |
| 2,4-Dinitrotoluene | 10 | - | - | - | - | - |
| Diethylphthalate | 10 | - | - | - | - | - |
| 4-Chlorophenyl-phenylether | 10 | - | - | - | - | - |
| Fluorene | 10 | - | - | - | - | - |
| 4-Nitroaniline | 50 | - | - | - | - | - |
| 4,6-Dinitro-2-methylphenol | 50 | - | - | - | - | - |
| N-Nitrosodiphenylamine | 10 | - | - | - | - | - |
| 4-Bromophenyl-phenylether | 10 | - | - | - | - | - |
| Hexachlorobenzene | 10 | - | - | - | - | - |
| Pentachlorophenol | 50 | - | - | - | - | - |
| Phenanthrene | 10 | - | - | - | - | - |
| Anthracene | 10 | - | - | - | - | - |
| Di-n-butylphthalate | 10 | - | - | - | - | - |
| Fluoranthene | 10 | - | - | - | - | - |
| Pyrene | 10 | - | - | - | - | - |
| Butylbenzylphthalate | 10 | - | - | - | - | - |
| 3,3'-Dichlorobenzidine | 20 | - | - | - | - | - |
| Benzo(a)Anthracene | 10 | - | - | - | - | - |
| Chrysene | 10 | - | - | - | - | - |
| bis(2-Ethylhexyl)phthalate | 10 | - | 27 J | - | - | - |
| Di-n-octylphthalate | 10 | - | - | - | - | 13 |
| Benzo(b)Fluoranthene | 10 | - | - | - | - | - |
| Benzo(k)Fluoranthene | 10 | - | - | - | - | - |
| Benzo(a)Pyrene | 10 | - | - | - | - | - |
| Indeno(1,2,3-c,d)Pyrene | 10 | - | - | - | - | - |
| Dibenz(a,h)Anthracene | 10 | - | - | - | - | - |
| Benzo(g,h,i)perylene | 10 | - | - | - | - | - |
| Dilution Factor: | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Associated Method Blank: | | T7173 | T7173 | T7173 | T7173 | T7173 |
| Associated Equipment Blank: | | 00QSXX1XXX01XX | 00QSXX1XXX01XX | 00QSXX1XXX01XX | 00QSXX1XXX01XX | 00QSXX1XXX01XX |
| Associated Field Blank: | | - | - | - | - | - |

Box Number: 6091-224
#: Level D validation
X: Mass spectrum does not meet EPA CLP criteria for compound presence is strongly suspected.

Summary Table

| ANALYTE | CRQL | 02MW033XXX01XD | 02MW033XXX01XX | 02MW034XXX01XX | 02MW035XXX01XX | 02MW036XXX01XX |
|---|---|---|---|---|---|---|
| LAB NUMBER: | | 42739 # | 42738 # | 42735 # | 42736 # | 42737 # |
| DATE SAMPLED: | | 01/29/91 | 01/29/91 | 01/29/91 | 01/29/91 | 01/29/91 |
| DATE EXTRACTED: | | 01/31/91 | 01/31/91 | 01/31/91 | 01/31/91 | 01/31/91 |
| DATE ANALYZED: | | 02/13/91 | 02/13/91 | 02/12/91 | 02/13/91 | 02/13/91 |
| Phenol | 10 | - | - | - | - | - |
| bis(2-Chloroethyl)ether | 10 | - | - | - | - | - |
| 2-Chlorophenol | 10 | - | - | - | - | - |
| 1,3-Dichlorobenzene | 10 | - | - | - | - | - |
| 1,4-Dichlorobenzene | 10 | - | - | - | - | - |
| Benzyl Alcohol | 10 | - | - | - | - | - |
| 1,2-Dichlorobenzene | 10 | - | - | - | - | - |
| 2-Methylphenol | 10 | - | - | - | - | - |
| bis(2-Chloroisopropyl)ether | 10 | - | - | - | - | - |
| 4-Methylphenol | 10 | - | - | - | - | 18 X |
| N-Nitroso-di-n-propylamine | 10 | - | - | - | - | - |
| Hexachloroethane | 10 | - | - | - | - | - |
| Nitrobenzene | 10 | - | - | - | - | - |
| Isophorone | 10 | - | - | - | - | - |
| 2-Nitrophenol | 10 | - | - | - | - | - |
| 2,4-Dimethylphenol | 10 | - | - | - | - | - |
| Benzoic Acid | 50 | - | - | - | - | - |
| bis(2-Chloroethoxy)methane | 10 | - | - | - | - | - |
| 2,4-Dichlorophenol | 10 | - | - | - | - | - |
| 1,2,4-Trichlorobenzene | 10 | - | - | - | - | - |
| Naphthalene | 10 | - | - | - | - | - |
| 4-Chloroaniline | 10 | - | - | - | - | - |
| Hexachlorobutadiene | 10 | - | - | - | - | - |
| 4-Chloro-3-Methylphenol | 10 | - | - | - | - | - |
| 2-Methylnaphthalene | 10 | - | - | - | - | - |
| Hexachlorocyclopentadiene | 10 | - | - | - | - | - |
| 2,4,6-Trichlorophenol | 10 | - | - | - | - | - |
| 2,4,5-Trichlorophenol | 50 | - | - | - | - | - |
| 2-Chloronaphthalene | 10 | - | - | - | - | - |
| 2-Nitroaniline | 50 | - | - | - | - | - |
| Dimethylphthalate | 10 | - | - | - | - | - |
| Acenaphthylene | 10 | - | - | - | - | - |
| 2,6-Dinitrotoluene | 10 | - | - | - | - | - |

Box Number: 6091-224
#: Level D validation
X: Mass spectrum does not meet EPA CLP criteria for compound presence is strongly suspected.

Dissolved Inorganic Aqueous Analysis (ug/L)

Summary Table

| ANALYTE | CRQL | 02MW033XXX01XD | 02MW033XXX01XX | 02MW034XXX01XX | 02MW035XXX01XX | 02MW036XXX01XX |
|---|---|---|---|---|---|---|
| | SAMPLE LOCATION: | 02MW033XXX01XD | 02MW033XXX01XX | 02MW034XXX01XX | 02MW035XXX01XX | 02MW036XXX01XX |
| | LAB NUMBER: | 42751 # | 42750 # | 42747 # | 42748 # | 42749 # |
| | DATE SAMPLED: | 01/29/91 | 01/29/91 | 01/29/91 | 01/29/91 | 01/29/91 |
| Aluminum | 200 | - | - | - | - | - |
| Antimony | 60 | - | - | - | - | - |
| Arsenic | 10 | - | - | - | - | - |
| Barium | 200 | - | - | - | - | - |
| Beryllium | 5 | - | - | - | - | - |
| Cadmium | 5 | - | - | - | - | - |
| Calcium | 5000 | 22800 | 22700 | 23500 | 26600 | 84900 |
| Chromium | 10 | - | - | - | - | - |
| Cobalt | 50 | - | - | - | - | - |
| Copper | 25 | - | - | - | - | - |
| Iron | 100 | - | - | 107 | - | 2660 |
| Lead | 3 | - | - | 6.5 J | - | - |
| Magnesium | 5000 | 7250 | 7230 | 7050 | 8250 | 23500 |
| Manganese | 15 | 98.6 | 98.6 | 106 | 120 | 641 |
| Mercury | 0.2 | - | - | - | - | - |
| Nickel | 40 | - | - | - | - | - |
| Potassium | 5000 | - | - | - | - | - |
| Selenium | 5 | - | - | - | - | - |
| Silver | 10 | - | - | - | - | - |
| Sodium | 5000 | 6100 | 6000 | 5100 | - | - |
| Thallium | 10 | - | - | - | - | - |
| Vanadium | 50 | - | - | - | - | - |
| Zinc | 20 | - | - | - | - | - |
| Cyanide | 10 | - | - | - | - | - |
| Associated Method Blank: | | PB4279 | PB4279 | PB4279 | PB4279 | PB4279 |
| Associated Equipment Blank: | | 00QSXX1XXX01XX | 00QSXX1XXX01XX | 00QSXX1XXX01XX | 00QSXX1XXX01XX | 00QSXX1XXX01XX |
| Associated Field Blank: | | - | - | - | - | - |

Box Number: 6091-225

#: Level D validation

PROJECT: Plattsburgh Air Force Base - 1990 RI Data

Total Inorganic Aqueous Analysis (ug/L)

Summary Table

| ANALYTE | CRQL | 02MW033XXX01XD | 02MW033XXX01XX | 02MW034XXX01XX | 02MW035XXX01XX | 02MW036XXX01XX |
|---|---|---|---|---|---|---|
| LAB NUMBER: | | 42745 # | 42744 # | 42741 # | 42742 # | 42743 # |
| DATE SAMPLED: | | 01/29/91 | 01/29/91 | 01/29/91 | 01/29/91 | 01/29/91 |
| Aluminum | 200 | 1150 | 1150 | - | - | - |
| Antimony | 60 | - | - | - | - | - |
| Arsenic | 10 | - | - | - | - | - |
| Barium | 200 | - | - | - | - | - |
| Beryllium | 5 | - | - | - | - | - |
| Cadmium | 5 | - | - | - | - | - |
| Calcium | 5000 | 25000 | 24800 | 24300 | 26500 | 83100 |
| Chromium | 10 | 58.7 J | 38.9 J | - | - | - |
| Cobalt | 50 | - | - | - | - | - |
| Copper | 25 | - | - | - | - | - |
| Iron | 100 | 1660 | 1390 | 233 | - | 3100 |
| Lead | 3 | 25.6 J | 19.2 J | R | - | - |
| Magnesium | 5000 | 8070 | 7970 | 7310 | 8220 | 22800 |
| Manganese | 15 | 144 | 147 | 112 | 121 | 639 |
| Mercury | 0.2 | - | - | - | - | - |
| Nickel | 40 | - | - | - | - | - |
| Potassium | 5000 | - | - | - | - | - |
| Selenium | 5 | - | - | - | - | - |
| Silver | 10 | - | - | - | - | - |
| Sodium | 5000 | 7280 | 7840 | 5390 | - | - |
| Thallium | 10 | - | - | - | - | - |
| Vanadium | 50 | - | - | - | - | - |
| Zinc | 20 | 9910 J | 2820 J | - | - | - |
| Cyanide | 10 | - | - | - | - | - |

| | | | | | |
|---|---|---|---|---|---|
| Associated Method Blank: | PB4279 | PB4279 | PB4279 | PB4279 | PB4279 |
| Associated Equipment Blank: | 00QSXX1XXX01XX | 00QSXX1XXX01XX | 00QSXX1XXX01XX | 00QSXX1XXX01XX | 00QSXX1XXX01XX |
| Associated Field Blank: | - | - | - | - | - |

Box Number: 6091-225

#: Level D validation

# PHASE II REMEDIAL INVESTIGATION
# (PCPT SURVEY)

PROJECT: Plattsburgh AFB

Low Level Volatile Aqueous Analysis (ug/L)

Summary Table

| ANALYTE SOW-02/88 | DL | 02CW00205201XX | 02CW00602401XX | 02CW01004601XX | 02CW01103501XX |
|---|---|---|---|---|---|
| LAB NUMBER: | | 52516 | 53281 | 53371 | 53370 |
| DATE SAMPLED: | | 06/12/91 | 06/14/91 | 06/17/91 | 06/17/91 |
| DATE ANALYZED: | | 06/20/91 | 06/20/91 | 06/20/91 | 06/20/91 |
| Chloromethane | 2 | - | - | - | - |
| Bromomethane | 2 | - | - | - | - |
| Vinyl Chloride | 2 | - | - | 6 | - |
| Chloroethane | 2 | - | - | - | - |
| Methylene Chloride | 1 | - | - | - | - |
| Acetone | 2 | - | - | - | - |
| Carbon Disulfide | 1 | - | 59 | - | 9 |
| 1,1-Dichloroethene | 1 | - | - | - | - |
| 1,1-Dichloroethane | 1 | - | - | 3 | - |
| 1,2-Dichloroethene (total) | 1 | - | 99 EJ | 27 | - |
| Chloroform | 1 | - | - | - | - |
| 1,2-Dichloroethane | 1 | - | - | 7 | - |
| 2-Butanone | 2 | - | - | - | - |
| 1,1,1-Trichloroethane | 1 | - | - | - | - |
| Carbon Tetrachloride | 1 | - | - | - | - |
| Vinyl Acetate | 2 | - | - | - | - |
| Bromodichloromethane | 1 | - | - | - | - |
| 1,2-Dichloropropane | 1 | - | - | - | - |
| cis-1,3-Dichloropropene | 1 | - | - | - | - |
| Trichloroethene | 1 | 12 | 2100 D | - | - |
| Dibromochloromethane | 1 | - | - | - | - |
| 1,1,2-Trichloroethane | 1 | - | - | - | - |
| Benzene | 1 | - | 3 | - | - |
| trans-1,3-Dichloropropene | 1 | - | - | - | - |
| Bromoform | 1 | - | - | - | - |
| 4-Methyl-2-Pentanone | 2 | - | - | - | - |
| 2-Hexanone | 2 | - | - | - | - |
| Tetrachloroethene | 1 | - | 5 | - | - |
| 1,1,2,2-Tetrachloroethane | 1 | - | - | - | - |
| Toluene | 1 | - | - | - | - |
| Chlorobenzene | 1 | - | - | - | - |
| Ethylbenzene | 1 | - | - | - | - |
| Styrene | 1 | - | - | - | - |
| Total Xylenes | 1 | - | - | - | - |
| Dilution Factor: | | 1.00 | 1.00 | 1.00 | 1.00 |

| | 02CW00205201XX | 02CW00602401XX | 02CW01004601XX | 02CW01103501XX |
|---|---|---|---|---|
| Associated Method Blank: | S2743 | S2743 | S2743 | S2743 |
| Associated Equipment Blank: | 02QECPTXXX01XX | 02QECPTXXX02XX | 00QECPTXXX03XX | 00QECPTXXX03XX |
| Associated Field Blank: | @@ | @@ | @@ | @@ |
| Associated Trip Blank: | 02QTCPTXXX01XX | 02QTCPTXXX02XX | 02QTCPTXXX03XX | 02QTCPTXXX03XX |

Box Number: 6091-106
@@: 02QDCPTXXX01XX and 02QSCPTXXX01XX

Summary Table

| ANALYTE SOW-02/88 | DL | 02CW01202501XX | 02CW01302801XX | 02CW01401001XX | 02CW01501201XD | 02CW01501201XX |
|---|---|---|---|---|---|---|
| LAB NUMBER: | | 53621 # | 53620 # | 53619 # | 53618 # | 53617 # |
| DATE SAMPLED: | | 06/18/91 | 06/18/91 | 06/18/91 | 06/18/91 | 06/18/91 |
| DATE ANALYZED: | | 06/28/91 | 06/27/91 | 06/27/91 | 06/27/91 | 06/27/91 |
| Chloromethane | 2 | - | - | - | - | - |
| Bromomethane | 2 | - | - | - | - | - |
| Vinyl Chloride | 2 | - | - | - | - | - |
| Chloroethane | 2 | - | - | - | - | - |
| Methylene Chloride | 1 | - | - | - | - | - |
| Acetone | 2 | - | - | - | - | - |
| Carbon Disulfide | 1 | - | 110 EJ | - | - | - |
| 1,1-Dichloroethene | 1 | 2 | - | - | - | - |
| 1,1-Dichloroethane | 1 | - | - | - | - | - |
| 1,2-Dichloroethene (total) | 1 | 500 DJ | 4 | - | 1 | 1 |
| Chloroform | 1 | - | - | - | - | - |
| 1,2-Dichloroethane | 1 | - | - | - | - | - |
| 2-Butanone | 2 | R | R | R | R | R |
| 1,1,1-Trichloroethane | 1 | - | - | - | - | - |
| Carbon Tetrachloride | 1 | - | - | - | - | - |
| Vinyl Acetate | 2 | R | R | R | R | R |
| Bromodichloromethane | 1 | - | - | - | - | - |
| 1,2-Dichloropropane | 1 | - | - | - | - | - |
| cis-1,3-Dichloropropene | 1 | - | - | - | - | - |
| Trichloroethene | 1 | 130 DJ | 6 | - | 2 | 2 |
| Dibromochloromethane | 1 | - | - | - | - | - |
| 1,1,2-Trichloroethane | 1 | - | - | - | - | - |
| Benzene | 1 | 9 | - | - | - | - |
| trans-1,3-Dichloropropene | 1 | - | - | - | - | - |
| Bromoform | 1 | - | - | - | - | - |
| 4-Methyl-2-Pentanone | 2 | - | - | - | - | - |
| 2-Hexanone | 2 | - | - | - | - | - |
| Tetrachloroethene | 1 | - | - | - | - | - |
| 1,1,2,2-Tetrachloroethane | 1 | - | - | - | - | - |
| Toluene | 1 | - | - | - | - | - |
| Chlorobenzene | 1 | - | - | - | - | - |
| Ethylbenzene | 1 | - | - | - | - | - |
| Styrene | 1 | - | - | - | - | - |
| Total Xylenes | 1 | - | - | - | - | - |
| Dilution Factor: | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Associated Method Blank: | | S2863 | S2849 | S2849 | S2849 | S2849 |
| Associated Equipment Blank: | | 02QECPTXXX04XX | 02QECPTXXX04XX | 02QECPTXXX04XX | 02QECPTXXX04XX | 02QECPTXXX04XX |
| Associated Field Blank: | | @@ | @@ | @@ | @@ | @@ |
| Associated Trip Blank: | | 00QTCPTXXX04XX | 00QTCPTXXX04XX | 00QTCPTXXX04XX | 00QTCPTXXX04XX | 00QTCPTXXX04XX |

Box Number: 6091-110

#: Region II Full Validation

@@: 02QDCPTXXX01XX and 02QSCPTXXX01XX

Summary Table

| ANALYTE SOW-02/88 | DL | | | | |
|---|---|---|---|---|---|
| SAMPLE LOCATION: | | 02CW02004601XX | | 02CW02007001XX | |
| LAB NUMBER: | | 53814 # | | 53811 # | |
| DATE SAMPLED: | | 06/19/91 | | 06/19/91 | |
| DATE ANALYZED: | | 06/28/91 | | 06/28/91 | |
| Chloromethane | 2 | - | | - | |
| Bromomethane | 2 | - | | - | |
| Vinyl Chloride | 2 | - | | - | |
| Chloroethane | 2 | - | | - | |
| Methylene Chloride | 1 | - | | - | |
| Acetone | 2 | - | | - | |
| Carbon Disulfide | 1 | 1 | J | 280 | |
| 1,1-Dichloroethene | 1 | 140 | J | - | |
| 1,1-Dichloroethane | 1 | - | | - | |
| 1,2-Dichloroethene (total) | 1 | 18000 | DJ | 57 | |
| Chloroform | 1 | - | | - | |
| 1,2-Dichloroethane | 1 | 45 | J | - | |
| 2-Butanone | 2 | | R | | R |
| 1,1,1-Trichloroethane | 1 | - | | - | |
| Carbon Tetrachloride | 1 | - | | - | |
| Vinyl Acetate | 2 | | R | | R |
| Bromodichloromethane | 1 | - | | - | |
| 1,2-Dichloropropane | 1 | - | | - | |
| cis-1,3-Dichloropropene | 1 | - | | - | |
| Trichloroethene | 1 | 4 | J | - | |
| Dibromochloromethane | 1 | - | | - | |
| 1,1,2-Trichloroethane | 1 | 19 | J | - | |
| Benzene | 1 | 100 | EJ | - | |
| trans-1,3-Dichloropropene | 1 | - | | - | |
| Bromoform | 1 | - | | - | |
| 4-Methyl-2-Pentanone | 2 | 70 | EJ | - | |
| 2-Hexanone | 2 | 96 | EJ | - | |
| Tetrachloroethene | 1 | - | | - | |
| 1,1,2,2-Tetrachloroethane | 1 | - | | - | |
| Toluene | 1 | 1100 | DJ | - | |
| Chlorobenzene | 1 | - | | - | |
| Ethylbenzene | 1 | 260 | EJ | - | |
| Styrene | 1 | - | | - | |
| Total Xylenes | 1 | 580 | EJ | 10 | |
| Dilution Factor: | | 1.0 | | 10 | |

| | | |
|---|---|---|
| Associated Method Blank: | S2863 | S2863 |
| Associated Equipment Blank: | 02QECPTXXX05XX | 02QECPTXXX05XX |
| Associated Field Blank: | @@ | @@ |
| Associated Trip Blank: | 00QTCPTXXX05XX | 00QTCPTXXX05XX |

Box Number: 6091-108
#: Region II Full Validation
@@: 02QDCPTXXX01XX and 02QSCPTXXX01XX

Summary Table

SAMPLE LOCATION: 02CW03502901XX
LAB NUMBER: 54966 R
DATE SAMPLED: 06/29/91
DATE ANALYZED: 07/16/91

| ANALYTE SOW-02/88 | DL | | |
|---|---|---|---|
| Chloromethane | 2 | | R |
| Bromomethane | 2 | | R |
| Vinyl Chloride | 2 | | R |
| Chloroethane | 2 | | R |
| Methylene Chloride | 1 | | R |
| Acetone | 2 | | R |
| Carbon Disulfide | 1 | 17 | J |
| 1,1-Dichloroethene | 1 | | R |
| 1,1-Dichloroethane | 1 | | R |
| 1,2-Dichloroethene (total) | 1 | | R |
| Chloroform | 1 | | R |
| 1,2-Dichloroethane | 1 | | R |
| 2-Butanone | 2 | | R |
| 1,1,1-Trichloroethane | 1 | | R |
| Carbon Tetrachloride | 1 | | R |
| Vinyl Acetate | 2 | | R |
| Bromodichloromethane | 1 | | R |
| 1,2-Dichloropropane | 1 | | R |
| cis-1,3-Dichloropropene | 1 | | R |
| Trichloroethene | 1 | | R |
| Dibromochloromethane | 1 | | R |
| 1,1,2-Trichloroethane | 1 | | R |
| Benzene | 1 | 3 | J |
| trans-1,3-Dichloropropene | 1 | | R |
| Bromoform | 1 | | R |
| 4-Methyl-2-Pentanone | 2 | | R |
| 2-Hexanone | 2 | | R |
| Tetrachloroethene | 1 | | R |
| 1,1,2,2-Tetrachloroethane | 1 | | R |
| Toluene | 1 | | R |
| Chlorobenzene | 1 | 3 | J |
| Ethylbenzene | 1 | | R |
| Styrene | 1 | | R |
| Total Xylenes | 1 | | R |
| Dilution Factor: | | 1.0 | |

Associated Method Blank: U8583
Associated Equipment Blank: 02QECPT00701XX
Associated Field Blank: @
Associated Trip Blank: 00QTCPT00601XX

Box Number: 6091-109
@: 00QDCPT00201XX and 00QSCPT00201XX

# PHASE II REMEDIAL INVESTIGATION
(FALL 1991)

PROJECT: Plattsburgh A.F.B. - Fall of 1991 　　Low Level Volatiles Aqueous Analysis (ug/L)

Summary Table

| | | MW-02-001 | MW-02-007 | MW-02-011 | MW-02-016 | MW-02-017 | MW-02-019 | MW-02-020 | MW-02-021 |
|---|---|---|---|---|---|---|---|---|---|
| LOCATION: | | MW-02-001 | MW-02-007 | MW-02-011 | MW-02-016 | MW-02-017 | MW-02-019 | MW-02-020 | MW-02-021 |
| ISIS ID: | | 02MW00100006XX | 02MW00700006XX | 02MW01100006XX | 02MW01600006XX | 02MW01700006XX | 02MW01900006XX | 02MW02000006XX | 02MW02100006XX |
| LAB NUMBER: | | 62412 # | 62473 # | 62474 # | 62411 # | 62408 # | 62415 # | 62416 # | 62058 # |
| DATE SAMPLED: | | 09/20/91 | 09/21/91 | 09/21/91 | 09/20/91 | 09/20/91 | 09/20/91 | 09/20/91 | 09/18/91 |
| DATE ANALYZED: | | 09/26/91 | 10/02/91 | 10/02/91 | 09/26/91 | 09/26/91 | 09/26/91 | 09/25/91 | 09/24/91 |
| ANALYTE SOW-02/88 | DL | | | | | | | | |
| Chloromethane | 2 | - | - | - | - | - | - | - | - |
| Bromomethane | 2 | - | - | - | - | - | - | - | - |
| Vinyl Chloride | 2 | - | - | - | - | - | - | - | - |
| Chloroethane | 2 | - | - | - | - | - | - | - | - |
| Methylene Chloride | 1 | - | - | - | - | - | - | - | - |
| Acetone | 2 | - | - | - | - | - | - | - | - |
| Carbon Disulfide | 1 | - | - | - | - | - | - | - | - |
| 1,1-Dichloroethene | 1 | - | - | - | - | - | - | - | - |
| 1,1-Dichloroethane | 1 | - | - | - | - | - | - | - | - |
| 1,2-Dichloroethene (total) | 1 | - | - | 540 | - | - | 2000 | 9800 | 5 |
| Chloroform | 1 | - | - | - | - | - | - | - | - |
| 1,2-Dichloroethane | 1 | - | - | - | - | - | - | - | - |
| 2-Butanone | 2 | R | R | R | R | R | R | R | R |
| 1,1,1-Trichloroethane | 1 | - | - | - | - | - | - | - | - |
| Carbon Tetrachloride | 1 | - | - | - | - | - | - | - | - |
| Vinyl Acetate | 2 | - | - | - | - | - | - | - | R |
| Bromodichloromethane | 1 | - | - | - | - | - | - | - | - |
| 1,2-Dichloropropane | 1 | - | - | - | - | - | - | - | - |
| cis-1,3-Dichloropropene | 1 | - | - | - | - | - | - | - | - |
| Trichloroethene | 1 | - | - | - | - | 2900 | - | - | 7 |
| Dibromochloromethane | 1 | - | - | - | - | - | - | - | - |
| 1,1,2-Trichloroethane | 1 | - | - | - | - | - | - | - | - |
| Benzene | 1 | - | - | - | - | - | 170 | 530 | - |
| trans-1,3-Dichloropropene | 1 | - | - | - | - | - | - | - | - |
| Bromoform | 1 | - | - | - | - | - | - | - | - |
| 4-Methyl-2-Pentanone | 2 | - | - | - | - | - | - | - | - |
| 2-Hexanone | 2 | R | R | R | R | R | R | R | R |
| Tetrachloroethene | 1 | - | - | - | - | 52 | - | - | - |
| 1,1,2,2-Tetrachloroethane | 1 | - | - | - | - | - | - | - | - |
| Toluene | 1 | - | - | - | - | - | - | 540 | - |
| Chlorobenzene | 1 | - | - | - | - | - | - | - | - |
| Ethylbenzene | 1 | - | - | - | - | - | 340 | 440 | - |
| Styrene | 1 | - | - | - | - | - | - | - | - |
| Total Xylenes | 1 | - | - | - | - | - | 740 | 1600 | - |
| Dilution Factor: | | 1.00 | 1.00 | 100 | 1.00 | 50.0 | 50.0 | 250 | 1.00 |
| Associated Method Blank: | | S3976 | Y1348 | Y1348 | S3976 | S3976 | S3976 | S3955 | S3920 |
| Associated Equipment Blank: | | 00QS00500006XX | 00QS00500006XX | 00QS00500006XX | 00QS00500006XX | 00QS00500006XX | 00QS00500006XX | 00QS00500006XX | 00QS00300006XX |
| Associated Field Blank: | | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX |
| Associated Trip Blank: | | 00QT00800006XX | 00QT00900006XX | 00QT00900006XX | 00QT00800006XX | 00QT00800006XX | 00QT00800006XX | 00QT00800006XX | 00QT00600006XX |

Site: Fire Training Area
#: Level D Validation

PROJECT: Plattsburgh A.F.B. - Fall of 1991

Low Level Volatiles Aqueous Analysis (ug/L)

Summary Table

| ANALYTE SOW-02/88 | DL | MW-02-022 | MW-02-022 | MW-02-023 | MW-02-026 | MW-02-027 | MW-02-030 | MW-02-031 | MW-02-037 |
|---|---|---|---|---|---|---|---|---|---|
| ISIS ID: | | 02MW02200006DX | 02MW02200006XX | 02MW02300006XX | 02MW02600006XX | 02MW02700006XX | 02MW03000006XX | 02MW03100006XX | 02MW03700006XX |
| LAB NUMBER: | | 62060 # | 62059 # | 62056 # | 62410 # | 62409 # | 62414 # | 62475 # | 61124 # |
| DATE SAMPLED: | | 09/18/91 | 09/18/91 | 09/18/91 | 09/20/91 | 09/20/91 | 09/20/91 | 09/21/91 | 09/10/91 |
| DATE ANALYZED: | | 09/24/91 | 09/25/91 | 09/25/91 | 09/26/91 | 09/26/91 | 09/26/91 | 10/02/91 | 09/17/91 |
| Chloromethane | 2 | - | - | - | - | - | - | - | - |
| Bromomethane | 2 | - | - | - | - | - | - | - | - |
| Vinyl Chloride | 2 | - | - | - | - | - | - | - | - |
| Chloroethane | 2 | - | - | - | - | - | - | - | - |
| Methylene Chloride | 1 | - | - | - | - | - | - | - | - |
| Acetone | 2 | - | 130 EJ | - | - | - | - | - | - |
| Carbon Disulfide | 1 | - | - | - | - | - | - | - | - |
| 1,1-Dichloroethene | 1 | - | - | - | - | - | - | - | - |
| 1,1-Dichloroethane | 1 | - | - | - | - | - | - | - | - |
| 1,2-Dichloroethene (total) | 1 | 10 | 9 | 120 | - | - | 140 | 3300 | - |
| Chloroform | 1 | - | - | - | - | - | - | - | - |
| 1,2-Dichloroethane | 1 | - | - | - | - | - | - | - | - |
| 2-Butanone | 2 | R | R | R | R | R | R | R | R |
| 1,1,1-Trichloroethane | 1 | - | - | - | - | - | - | - | - |
| Carbon Tetrachloride | 1 | - | - | - | - | - | - | - | - |
| Vinyl Acetate | 2 | R | - | - | - | - | - | - | - |
| Bromodichloromethane | 1 | - | - | - | - | - | - | - | - |
| 1,2-Dichloropropane | 1 | - | - | - | - | - | - | - | - |
| cis-1,3-Dichloropropene | 1 | - | - | - | - | - | - | - | - |
| Trichloroethene | 1 | 9 | 10 | 1400 J | - | 2 | 56 | - | - |
| Dibromochloromethane | 1 | - | - | - | - | - | - | - | - |
| 1,1,2-Trichloroethane | 1 | - | - | - | - | - | - | - | - |
| Benzene | 1 | - | - | 71 J | - | - | 12 | - | - |
| trans-1,3-Dichloropropene | 1 | - | - | - | - | - | - | - | - |
| Bromoform | 1 | - | - | - | - | - | - | - | - |
| 4-Methyl-2-Pentanone | 2 | - | - | - | - | - | - | - | - |
| 2-Hexanone | 2 | R | R | R | R | R | R | R | R |
| Tetrachloroethene | 1 | - | - | - | - | - | - | - | - |
| 1,1,2,2-Tetrachloroethane | 1 | - | - | - | - | - | - | - | - |
| Toluene | 1 | - | - | - | - | - | - | - | - |
| Chlorobenzene | 1 | - | - | - | - | - | 7 | - | - |
| Ethylbenzene | 1 | - | - | - | - | - | - | 530 X | - |
| Styrene | 1 | - | - | - | - | - | - | - | - |
| Total Xylenes | 1 | - | - | - | - | - | - | 1800 | - |
| Dilution Factor: | | 1.00 | 2.00 | 50.0 | 1.00 | 1.00 | 5.00 | 500 | 1.00 |
| Associated Method Blank: | | S3920 | S3955 | S3955 | S3976 | S3976 | S3976 | Y1348 | S3793 |
| Associated Equipment Blank: | | 00QS00300006XX | 00QS00300006XX | 00QS00300006XX | 00QS00500006XX | 00QS00500006XX | 00QS00500006XX | 00QS00500006XX | - |
| Associated Field Blank: | | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00100006XX |
| Associated Trip Blank: | | 00QT00600006XX | 00QT00600006XX | 00QT00600006XX | 00QT00800006XX | 00QT00800006XX | 00QT00800006XX | 00QT00900006XX | 00QT00100006XX |

Site: Fire Training Area
#: Level D Validation

PROJECT: Plattsburgh A.F.B. - Fall of 1991 — Low Level Volatiles Aqueous Analysis (ug/L)

Summary Table

| | | LOCATION: | MW-02-038 | MW-02-039 | MW-02-040 | MW-02-041 | MW-02-041 | MW-02-042 | MW-02-043 | MW-02-044 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ISIS ID: | 02MW03800006XX | 02MW03900006XX | 02MW04000006XX | 02MW04100006DX | 02MW04100006XX | 02MW04200006XX | 02MW04300006XX | 02MW04400006XX |
| | | LAB NUMBER: | 61125 # | 61947 # | 61593 # | 61949 # | 61948 # | 61592 # | 61950 # | 61126 # |
| | | DATE SAMPLED: | 09/10/91 | 09/17/91 | 09/12/91 | 09/17/91 | 09/17/91 | 09/12/91 | 09/17/91 | 09/10/91 |
| | | DATE ANALYZED: | 09/17/91 | 09/23/91 | 09/18/91 | 09/24/91 | 09/23/91 | 09/18/91 | 09/24/91 | 09/17/91 |
| ANALYTE | SOW-02/88 | DL | | | | | | | | |
| Chloromethane | | 2 | - | - | - | - | - | - | - | - |
| Bromomethane | | 2 | - | - | - | - | - | - | - | - |
| Vinyl Chloride | | 2 | - | - | - | - | - | - | - | - |
| Chloroethane | | 2 | - | - | - | - | - | - | - | - |
| Methylene Chloride | | 1 | - | - | - | - | - | - | - | - |
| Acetone | | 2 | - | - | - | - | - | - | - | - |
| Carbon Disulfide | | 1 | - | - | - | - | - | - | - | - |
| 1,1-Dichloroethene | | 1 | - | - | - | - | - | - | - | - |
| 1,1-Dichloroethane | | 1 | - | - | - | - | - | - | - | - |
| 1,2-Dichloroethene (total) | | 1 | 45 | - | 180 | 6600 | 6900 | 960 | - | 2 |
| Chloroform | | 1 | - | - | - | - | - | - | - | - |
| 1,2-Dichloroethane | | 1 | - | - | - | - | - | - | - | - |
| 2-Butanone | | 2 | R | R | R | R | R | R | R | R |
| 1,1,1-Trichloroethane | | 1 | - | - | - | - | - | - | - | - |
| Carbon Tetrachloride | | 1 | - | - | - | - | - | - | - | - |
| Vinyl Acetate | | 2 | - | - | - | - | - | - | - | - |
| Bromodichloromethane | | 1 | - | - | - | - | - | - | - | - |
| 1,2-Dichloropropane | | 1 | - | - | - | - | - | - | - | - |
| cis-1,3-Dichloropropene | | 1 | - | - | - | - | - | - | - | - |
| Trichloroethene | | 1 | 59 | 3900 | - | - | - | 60 | 100 | 56 |
| Dibromochloromethane | | 1 | - | - | - | - | - | - | - | - |
| 1,1,2-Trichloroethane | | 1 | - | - | - | - | - | - | - | - |
| Benzene | | 1 | - | - | - | - | - | - | - | - |
| trans-1,3-Dichloropropene | | 1 | - | - | - | - | - | - | - | - |
| Bromoform | | 1 | - | - | - | - | - | - | - | - |
| 4-Methyl-2-Pentanone | | 2 | - | - | - | - | - | - | - | - |
| 2-Hexanone | | 2 | R | R | R | R | R | R | R | R |
| Tetrachloroethene | | 1 | - | - | - | - | - | - | - | - |
| 1,1,2,2-Tetrachloroethane | | 1 | - | - | - | - | - | - | - | - |
| Toluene | | 1 | - | - | - | - | - | - | - | - |
| Chlorobenzene | | 1 | - | - | - | - | - | - | - | - |
| Ethylbenzene | | 1 | - | - | - | - | - | - | - | - |
| Styrene | | 1 | - | - | - | - | - | - | - | - |
| Total Xylenes | | 1 | - | - | - | - | - | - | - | - |
| Dilution Factor: | | | 5.00 | 250 | 5.00 | 250 | 250 | 50.0 | 5.00 | 1.00 |
| Associated Method Blank: | | | S3793 | S3905 | S3808 | S3905 | S3905 | S3825 | S3905 | S3793 |
| Associated Equipment Blank: | | | - | - | 00QS00200006XX | - | - | 00QS00200006XX | - | - |
| Associated Field Blank: | | | 00QD00100006XX | 00QD00200006XX | 00QD00100006XX | 00QD00200006XX | 00QD00200006XX | 00QD00100006XX | 00QD00200006XX | 00QD00100006XX |
| Associated Trip Blank: | | | 00QT00100006XX | 00QT00500006XX | 00QT00300006XX | 00QT00500006XX | 00QT00500006XX | 00QT00300006XX | 00QT00500006XX | 00QT00100006XX |

Site: Fire Training Area
#: Level D Validation

PROJECT: Plattsburgh A.F.B. - Fall of 1991

Low Level Volatiles Aqueous Analysis (ug/L)

Summary Table

| LOCATION: | | MW-02-045 | MW-02-045 | MW-02-046 | MW-02-047 | MW-02-048 | MW-02-048 | MW-02-049 | MW-04-010 |
|---|---|---|---|---|---|---|---|---|---|
| ISIS ID: | | 02MW04500006DX | 02MW04500006XX | 02MW04600006XX | 02MW04700006XX | 02MW04800006DX | 02MW04800006XX | 02MW04900006XX | 04MW00100006XX |
| LAB NUMBER: | | 61443 # | 61442 # | 61444 # | 62055 # | 62407 # | 62406 # | 61127 # | 61951 # |
| DATE SAMPLED: | | 09/11/91 | 09/11/91 | 09/11/91 | 09/18/91 | 09/20/91 | 09/20/91 | 09/10/91 | 09/17/91 |
| DATE ANALYZED: | | 09/17/91 | 09/18/91 | 09/18/91 | 09/24/91 | 09/26/91 | 09/26/91 | 09/17/91 | 09/24/91 |
| ANALYTE · SOW-02/88 | DL | | | | | | | | |
| Chloromethane | 2 | - | - | - | - | - | - | - | - |
| Bromomethane | 2 | - | - | - | - | - | - | - | - |
| Vinyl Chloride | 2 | - | - | - | - | - | - | - | - |
| Chloroethane | 2 | - | - | - | - | - | - | - | - |
| Methylene Chloride | 1 | - | - | - | 1 | - | - | - | - |
| Acetone | 2 | - | - | - | - | - | - | - | - |
| Carbon Disulfide | 1 | - | - | - | - | - | - | - | - |
| 1,1-Dichloroethene | 1 | - | - | - | - | - | - | - | - |
| 1,1-Dichloroethane | 1 | - | - | - | - | - | - | - | - |
| 1,2-Dichloroethene (total) | 1 | 250 | 200 | 19 | - | 83 | 96 | - | - |
| Chloroform | 1 | - | - | - | - | - | - | - | - |
| 1,2-Dichloroethane | 1 | - | - | - | - | - | - | - | - |
| 2-Butanone | 2 | R | R | R | R | R | R | R | R |
| 1,1,1-Trichloroethane | 1 | - | - | - | - | - | - | - | - |
| Carbon Tetrachloride | 1 | - | - | - | - | - | - | - | - |
| Vinyl Acetate | 2 | - | - | - | R | - | - | - | - |
| Bromodichloromethane | 1 | - | - | - | - | - | - | - | - |
| 1,2-Dichloropropane | 1 | - | - | - | - | - | - | - | - |
| cis-1,3-Dichloropropene | 1 | - | - | - | - | - | - | - | - |
| Trichloroethene | 1 | - | - | - | - | 280 | 400 | - | - |
| Dibromochloromethane | 1 | - | - | - | - | - | - | - | - |
| 1,1,2-Trichloroethane | 1 | - | - | - | - | - | - | - | - |
| Benzene | 1 | - | - | - | - | - | - | - | - |
| trans-1,3-Dichloropropene | 1 | - | - | - | - | - | - | - | - |
| Bromoform | 1 | - | - | - | - | - | - | - | - |
| 4-Methyl-2-Pentanone | 2 | - | - | - | - | - | - | - | - |
| 2-Hexanone | 2 | R | R | R | R | R | R | R | R |
| Tetrachloroethene | 1 | - | - | - | - | - | - | - | - |
| 1,1,2,2-Tetrachloroethane | 1 | - | - | - | - | - | - | - | - |
| Toluene | 1 | - | - | - | - | - | - | - | - |
| Chlorobenzene | 1 | - | - | - | - | - | - | - | - |
| Ethylbenzene | 1 | - | - | - | - | - | - | - | - |
| Styrene | 1 | - | - | - | - | - | - | - | - |
| Total Xylenes | 1 | - | - | - | - | - | - | - | - |
| Dilution Factor: | | 10.0 | 10.0 | 1.00 | 1.00 | 10.0 | 20.0 | 1.00 | 1.00 |
| Associated Method Blank: | | S3793 | S3808 | S3808 | S3920 | S3976 | S3976 | S3793 | S3905 |
| Associated Equipment Blank: | | 00QS00100006XX | 00QS00100006XX | 00QS00100006XX | 00QS00300006XX | 00QS00500006XX | 00QS00500006XX | - | - |
| Associated Field Blank: | | 00QD00100006XX | 00QD00100006XX | 00QD00100006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00100006XX | 00QD00200006XX |
| Associated Trip Blank: | | 00QT00200006XX | 00QT00200006XX | 00QT00200006XX | 00QT00600006XX | 00QT00800006XX | 00QT00800006XX | 00QT00100006XX | 00QT00500006XX |

Site: Fire Training Area
#: Level D Validation

Summary Table

| | | LOCATION: | MW-04-004 | MW-04-005 | MW-04-006 | MW-13-002 | MW-16-001 |
|---|---|---|---|---|---|---|---|
| | | ISIS ID: | 04MW00400006XX | 04MW00500006XX | 04MW00600006XX | 13MW00200006XX | 16MW00100006XX |
| | | LAB NUMBER: | 61952 # | 61590 # | 61953 # | 62057 # | 61589 # |
| | | DATE SAMPLED: | 09/17/91 | 09/12/91 | 09/17/91 | 09/18/91 | 09/12/91 |
| | | DATE ANALYZED: | 09/24/91 | 09/18/91 | 09/24/91 | 09/24/91 | 09/18/91 |
| ANALYTE | SOW-02/88 | DL | | | | | |
| Chloromethane | | 2 | - | - | - | - | - |
| Bromomethane | | 2 | - | - | - | - | - |
| Vinyl Chloride | | 2 | - | - | - | - | - |
| Chloroethane | | 2 | - | - | - | - | - |
| Methylene Chloride | | 1 | - | - | - | 1 | - |
| Acetone | | 2 | - | - | - | - | - |
| Carbon Disulfide | | 1 | - | - | - | - | - |
| 1,1-Dichloroethene | | 1 | - | - | - | - | - |
| 1,1-Dichloroethane | | 1 | - | - | - | - | - |
| 1,2-Dichloroethene (total) | | 1 | - | - | - | - | - |
| Chloroform | | 1 | - | - | - | - | - |
| 1,2-Dichloroethane | | 1 | - | - | - | - | - |
| 2-Butanone | | 2 | R | R | R | R | R |
| 1,1,1-Trichloroethane | | 1 | - | - | - | - | - |
| Carbon Tetrachloride | | 1 | - | - | - | - | - |
| Vinyl Acetate | | 2 | - | - | - | R | - |
| Bromodichloromethane | | 1 | - | - | - | - | - |
| 1,2-Dichloropropane | | 1 | - | - | - | - | - |
| cis-1,3-Dichloropropene | | 1 | - | - | - | - | - |
| Trichloroethene | | 1 | - | 62 | - | - | - |
| Dibromochloromethane | | 1 | - | - | - | - | - |
| 1,1,2-Trichloroethane | | 1 | - | - | - | - | - |
| Benzene | | 1 | - | - | - | - | - |
| trans-1,3-Dichloropropene | | 1 | - | - | - | - | - |
| Bromoform | | 1 | - | - | - | - | - |
| 4-Methyl-2-Pentanone | | 2 | - | - | - | - | - |
| 2-Hexanone | | 2 | R | R | R | R | R |
| Tetrachloroethene | | 1 | - | - | - | - | - |
| 1,1,2,2-Tetrachloroethane | | 1 | - | - | - | - | - |
| Toluene | | 1 | - | - | - | - | - |
| Chlorobenzene | | 1 | - | - | - | - | - |
| Ethylbenzene | | 1 | - | - | - | - | - |
| Styrene | | 1 | - | - | - | - | - |
| Total Xylenes | | 1 | - | - | - | - | - |
| | | Dilution Factor: | 1.00 | 5.00 | 1.00 | 1.00 | 5.00 |
| | | Associated Method Blank: | S3905 | S3808 | S3905 | S3920 | S3808 |
| | | Associated Equipment Blank: | - | 00QS00200006XX | - | 00QS00300006XX | 00QS00200006XX |
| | | Associated Field Blank: | 00QD00200006XX | 00QD00100006XX | 00QD00200006XX | 00QD00200006XX | 00QD00100006XX |
| | | Associated Trip Blank: | 00QT00500006XX | 00QT00300006XX | 00QT00500006XX | 00QT00600006XX | 00QT00300006XX |

Site: Fire Training Area
#: Level D Validation

PROJECT: Plattsburgh A.F.B. - Fall of 1991

Semivolatile Organic Aqueous Analysis (ug/L)

Summary Table

| ANALYTE | SOW-02/88 CRQL | MW-02-001 | MW-02-007 | MW-02-011 | MW-02-016 | MW-02-017 | MW-02-019 | MW-02-020 | MW-02-021 |
|---|---|---|---|---|---|---|---|---|---|
| ISIS ID: | | 02MW00100006XX | 02MW00700006XX | 02MW01100006XX | 02MW01600006XX | 02MW01700006XX | 02MW01900006XX | 02MW02000006XX | 02MW02100006XX |
| LAB NUMBER: | | 62423 # | 62482 # | 62483 # | 62422 # | 62419 # | 62426 # | 62427 # | 62070 # |
| DATE SAMPLED: | | 09/20/91 | 09/21/91 | 09/21/91 | 09/20/91 | 09/20/91 | 09/20/91 | 09/20/91 | 09/18/91 |
| DATE EXTRACTED: | | 09/25/91 | 09/28/91 | 09/28/91 | 09/25/91 | 09/25/91 | 09/25/91 | 09/25/91 | 09/23/91 |
| DATE ANALYZED: | | 10/25/91 | 11/01/91 | 10/31/91 | 10/25/91 | 10/24/91 | 10/31/91 | 10/28/91 | 10/25/91 |
| Phenol | 10 | - | - | - | - | - | - | 13 | - |
| bis(2-Chloroethyl)ether | 10 | - | - | - | - | - | - | - | - |
| 2-Chlorophenol | 10 | - | - | - | - | - | - | - | - |
| 1,3-Dichlorobenzene | 10 | - | - | - | - | - | - | - | - |
| 1,4-Dichlorobenzene | 10 | - | - | - | - | - | - | - | - |
| Benzyl Alcohol | 10 | - | - | - | - | - | - | - | - |
| 1,2-Dichlorobenzene | 10 | - | - | - | - | - | - | - | - |
| 2-Methylphenol | 10 | - | - | - | - | - | - | - | - |
| bis(2-Chloroisopropyl)ether | 10 | - | - | - | - | - | - | - | - |
| 4-Methylphenol | 10 | - | - | - | - | - | - | 64 | - |
| N-Nitroso-di-n-propylamine | 10 | - | - | - | - | - | - | - | - |
| Hexachloroethane | 10 | - | - | - | - | - | - | - | - |
| Nitrobenzene | 10 | - | - | - | - | - | - | - | - |
| Isophorone | 10 | - | - | - | - | - | - | - | - |
| 2-Nitrophenol | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dimethylphenol | 10 | - | - | - | - | - | 12 | 51 | - |
| Benzoic Acid | 50 | - | - | - | - | - | - | - | - |
| bis(2-Chloroethoxy)methane | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dichlorophenol | 10 | - | - | - | - | - | - | - | - |
| 1,2,4-Trichlorobenzene | 10 | - | - | - | - | - | - | - | 14 |
| Naphthalene | 10 | - | - | - | - | - | 42 | 53 | - |
| 4-Chloroaniline | 10 | - | - | - | - | - | - | - | - |
| Hexachlorobutadiene | 10 | - | - | - | - | - | - | - | - |
| 4-Chloro-3-Methylphenol | 10 | - | - | - | - | - | - | - | - |
| 2-Methylnaphthalene | 10 | - | - | - | - | - | 23 | 24 | - |
| Hexachlorocyclopentadiene | 10 | - | - | - | - | - | - | - | - |
| 2,4,6-Trichlorophenol | 10 | - | - | - | - | - | - | - | - |
| 2,4,5-Trichlorophenol | 50 | - | - | - | - | - | - | - | - |
| 2-Chloronaphthalene | 10 | - | - | - | - | - | - | - | - |
| 2-Nitroaniline | 50 | - | - | - | - | - | - | - | - |
| Dimethylphthalate | 10 | - | - | - | - | - | - | - | - |
| Acenaphthylene | 10 | - | - | - | - | - | - | - | - |
| 2,6-Dinitrotoluene | 10 | - | - | - | - | - | - | - | - |

Site: Fire Training Area
#: Level D Validation

Summary Table

| ANALYTE | CRQL | MW-02-001 | MW-02-007 | MW-02-011 | MW-02-016 | MW-02-017 | MW-02-019 | MW-02-020 | MW-02-021 |
|---|---|---|---|---|---|---|---|---|---|
| ISIS ID: | | 02MW00100006XX | 02MW00700006XX | 02MW01100006XX | 02MW01600006XX | 02MW01700006XX | 02MW01900006XX | 02MW02000006XX | 02MW02100006XX |
| LAB NUMBER: | | 62423 # | 62482 # | 62483 # | 62422 # | 62419 # | 62426 # | 62427 # | 62070 # |
| DATE SAMPLED: | | 09/20/91 | 09/21/91 | 09/21/91 | 09/20/91 | 09/20/91 | 09/20/91 | 09/20/91 | 09/18/91 |
| DATE EXTRACTED: | | 09/25/91 | 09/28/91 | 09/28/91 | 09/25/91 | 09/25/91 | 09/25/91 | 09/25/91 | 09/23/91 |
| DATE ANALYZED: | | 10/25/91 | 11/01/91 | 10/31/91 | 10/25/91 | 10/24/91 | 10/31/91 | 10/28/91 | 10/25/91 |
| SOW-02/88 | | | | | | | | | |
| 3-Nitroaniline | 50 | - | - | - | - | - | - | - | - |
| Acenaphthene | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dinitrophenol | 50 | - | - | - | - | - | - | - | - |
| 4-Nitrophenol | 50 | - | - | - | - | - | - | - | - |
| Dibenzofuran | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dinitrotoluene | 10 | - | - | - | - | - | - | - | - |
| Diethylphthalate | 10 | - | - | - | - | - | - | - | - |
| 4-Chlorophenyl-phenylether | 10 | - | - | - | - | - | - | - | - |
| Fluorene | 10 | - | - | - | - | - | - | - | - |
| 4-Nitroaniline | 50 | - | - | - | - | - | - | - | - |
| 4,6-Dinitro-2-methylphenol | 50 | - | - | - | - | - | - | - | - |
| N-Nitrosodiphenylamine | 10 | - | - | - | - | - | - | - | - |
| 4-Bromophenyl-phenylether | 10 | - | - | - | - | - | - | - | - |
| Hexachlorobenzene | 10 | - | - | - | - | - | - | - | - |
| Pentachlorophenol | 50 | - | - | - | - | - | - | - | - |
| Phenanthrene | 10 | - | - | - | - | - | - | - | - |
| Anthracene | 10 | - | - | - | - | - | - | - | - |
| Di-n-butylphthalate | 10 | - | - | - | - | - | - | - | - |
| Fluoranthene | 10 | - | - | - | - | - | - | - | - |
| Pyrene | 10 | - | - | - | - | - | - | - | - |
| Butylbenzylphthalate | 10 | - | - | - | - | - | - | - | - |
| 3,3'-Dichlorobenzidine | 20 | - | - | - | - | - | - | - | - |
| Benzo(a)Anthracene | 10 | - | - | - | - | - | - | - | - |
| Chrysene | 10 | - | - | - | - | - | - | - | - |
| bis(2-Ethylhexyl)phthalate | 10 | - | - | 17 | - | - | - | - | - |
| Di-n-octylphthalate | 10 | - | - | - | - | - | - | - | - |
| Benzo(b)Fluoranthene | 10 | - | - | - | - | - | - | - | - |
| Benzo(k)Fluoranthene | 10 | - | - | - | - | - | - | - | - |
| Benzo(a)Pyrene | 10 | - | - | - | - | - | - | - | - |
| Indeno(1,2,3-c,d)Pyrene | 10 | - | - | - | - | - | - | - | - |
| Dibenz(a,h)Anthracene | 10 | - | - | - | - | - | - | - | - |
| Benzo(g,h,i)perylene | 10 | - | - | - | - | - | - | - | - |
| Dilution Factor: | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Associated Method Blank: | | P1175 | P1265 | P1265 | P1175 | P1175 | P1175 | P1175 | P1254 |
| Associated Equipment Blank: | | 00QS00500006XX | - | - | 00QS00500006XX | 00QS00500006XX | 00QS00500006XX | 00QS00500006XX | 00QS00300006XX |
| Associated Field Blank: | | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX |

Site: Fire Training Area
#: Level D Validation

PROJECT: Plattsburgh A.F.B. - Fall of 1991

Semivolatile Organic Aqueous Analysis (ug/L)

Summary Table

| | | LOCATION: | MW-02-021 | MW-02-022 | MW-02-022 | MW-02-023 | MW-02-026 | MW-02-027 | MW-02-030 | MW-02-031 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ISIS ID: | 02MW02100006XX | 02MW02200006DX | 02MW02200006XX | 02MW02300006XX | 02MW02600006XX | 02MW02700006XX | 02MW03000006XX | 02MW03100006XX |
| | | LAB NUMBER: | 62070 R # | 62072 # | 62071 # | 62068 # | 62421 # | 62420 # | 62425 # | 62484 # |
| | | DATE SAMPLED: | 09/18/91 | 09/18/91 | 09/18/91 | 09/18/91 | 09/20/91 | 09/20/91 | 09/20/91 | 09/21/91 |
| | | DATE EXTRACTED: | 09/23/91 | 09/23/91 | 09/23/91 | 09/23/91 | 09/25/91 | 09/25/91 | 09/25/91 | 09/28/91 |
| | | DATE ANALYZED: | 10/28/91 | 10/25/91 | 10/25/91 | 10/24/91 | 10/25/91 | 10/25/91 | 10/28/91 | 10/31/91 |
| ANALYTE | SOW-02/88 | CRQL | | | | | | | | |
| Phenol | | 10 | - | - | - | - | - | - | - | - |
| bis(2-Chloroethyl)ether | | 10 | - | - | - | - | - | - | - | - |
| 2-Chlorophenol | | 10 | - | - | - | - | - | - | - | - |
| 1,3-Dichlorobenzene | | 10 | - | - | - | - | - | - | - | - |
| 1,4-Dichlorobenzene | | 10 | - | - | - | - | - | - | - | - |
| Benzyl Alcohol | | 10 | - | - | - | - | - | - | - | - |
| 1,2-Dichlorobenzene | | 10 | - | - | - | - | - | - | - | - |
| 2-Methylphenol | | 10 | - | - | - | - | - | - | - | - |
| bis(2-Chloroisopropyl)ether | | 10 | - | - | - | - | - | - | - | - |
| 4-Methylphenol | | 10 | - | - | - | - | - | - | - | 33 |
| N-Nitroso-di-n-propylamine | | 10 | - | - | - | - | - | - | - | - |
| Hexachloroethane | | 10 | - | - | - | - | - | - | - | - |
| Nitrobenzene | | 10 | - | - | - | - | - | - | - | - |
| Isophorone | | 10 | - | - | - | - | - | - | - | - |
| 2-Nitrophenol | | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dimethylphenol | | 10 | - | - | - | - | - | - | - | 17 |
| Benzoic Acid | | 50 | - | - | - | - | - | - | - | - |
| bis(2-Chloroethoxy)methane | | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dichlorophenol | | 10 | - | - | - | - | - | - | - | - |
| 1,2,4-Trichlorobenzene | | 10 | - | - | - | - | - | - | - | - |
| Naphthalene | | 10 | - | - | - | - | - | - | - | 39 |
| 4-Chloroaniline | | 10 | - | - | - | - | - | - | - | - |
| Hexachlorobutadiene | | 10 | - | - | - | - | - | - | - | - |
| 4-Chloro-3-Methylphenol | | 10 | - | - | - | - | - | - | - | - |
| 2-Methylnaphthalene | | 10 | - | - | - | - | - | - | - | 16 |
| Hexachlorocyclopentadiene | | 10 | - | - | - | - | - | - | - | - |
| 2,4,6-Trichlorophenol | | 10 | - | - | - | - | - | - | - | - |
| 2,4,5-Trichlorophenol | | 50 | - | - | - | - | - | - | - | - |
| 2-Chloronaphthalene | | 10 | - | - | - | - | - | - | - | - |
| 2-Nitroaniline | | 50 | - | - | - | - | - | - | - | - |
| Dimethylphthalate | | 10 | - | - | - | - | - | - | - | - |
| Acenaphthylene | | 10 | - | - | - | - | - | - | - | - |
| 2,6-Dinitrotoluene | | 10 | - | - | - | - | - | - | - | - |

Site: Fire Training Area
#: Level D Validation

# Semivolatile Organic Aqueous Analysis (ug/L)

Summary Table

| ANALYTE SOW-02/88 | CRQL | MW-02-021 | MW-02-022 | MW-02-022 | MW-02-023 | MW-02-026 | MW-02-027 | MW-02-030 | MW-02-031 |
|---|---|---|---|---|---|---|---|---|---|
| ISIS ID: | | 02MW02100006XX | 02MW02200006DX | 02MW02200006XX | 02MW02300006XX | 02MW02600006XX | 02MW02700006XX | 02MW03000006XX | 02MW03100006XX |
| LAB NUMBER: | | 62070 R # | 62072 # | 62071 # | 62068 # | 62421 # | 62420 # | 62425 # | 62484 # |
| DATE SAMPLED: | | 09/18/91 | 09/18/91 | 09/18/91 | 09/18/91 | 09/20/91 | 09/20/91 | 09/20/91 | 09/21/91 |
| DATE EXTRACTED: | | 09/23/91 | 09/23/91 | 09/23/91 | 09/23/91 | 09/25/91 | 09/25/91 | 09/25/91 | 09/28/91 |
| DATE ANALYZED: | | 10/28/91 | 10/25/91 | 10/25/91 | 10/24/91 | 10/25/91 | 10/25/91 | 10/28/91 | 10/31/91 |
| 3-Nitroaniline | 50 | - | - | - | - | - | - | - | - |
| Acenaphthene | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dinitrophenol | 50 | - | - | - | - | - | - | - | - |
| 4-Nitrophenol | 50 | - | - | - | - | - | - | - | - |
| Dibenzofuran | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dinitrotoluene | 10 | - | - | - | - | - | - | - | - |
| Diethylphthalate | 10 | - | - | - | - | - | - | - | - |
| 4-Chlorophenyl-phenylether | 10 | - | - | - | - | - | - | - | - |
| Fluorene | 10 | - | - | - | - | - | - | - | - |
| 4-Nitroaniline | 50 | - | - | - | - | - | - | - | - |
| 4,6-Dinitro-2-methylphenol | 50 | - | - | - | - | - | - | - | - |
| N-Nitrosodiphenylamine | 10 | - | - | - | - | - | - | - | - |
| 4-Bromophenyl-phenylether | 10 | - | - | - | - | - | - | - | - |
| Hexachlorobenzene | 10 | - | - | - | - | - | - | - | - |
| Pentachlorophenol | 50 | - | - | - | - | - | - | - | - |
| Phenanthrene | 10 | - | - | - | - | - | - | - | - |
| Anthracene | 10 | - | - | - | - | - | - | - | - |
| Di-n-butylphthalate | 10 | - | - | - | - | - | - | - | - |
| Fluoranthene | 10 | - | - | - | - | - | - | - | - |
| Pyrene | 10 | - | - | - | - | - | - | - | - |
| Butylbenzylphthalate | 10 | - | - | - | - | - | - | - | - |
| 3,3'-Dichlorobenzidine | 20 | - | - | - | - | - | - | - | - |
| Benzo(a)Anthracene | 10 | - | - | - | - | - | - | - | - |
| Chrysene | 10 | - | - | - | - | - | - | - | - |
| bis(2-Ethylhexyl)phthalate | 10 | - | - | - | - | - | 36 | - | - |
| Di-n-octylphthalate | 10 | - | - | - | - | - | - | - | - |
| Benzo(b)Fluoranthene | 10 | - | - | - | - | - | - | - | - |
| Benzo(k)Fluoranthene | 10 | - | - | - | - | - | - | - | - |
| Benzo(a)Pyrene | 10 | - | - | - | - | - | - | - | - |
| Indeno(1,2,3-c,d)Pyrene | 10 | - | - | - | - | - | - | - | - |
| Dibenz(a,h)Anthracene | 10 | - | - | - | - | - | - | - | - |
| Benzo(g,h,i)perylene | 10 | - | - | - | - | - | - | - | - |
| Dilution Factor: | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Associated Method Blank: | | P1254 | P1254 | P1254 | P1254 | P1175 | P1175 | P1175 | P1265 |
| Associated Equipment Blank: | | 00QS00300006XX | 00QS00300006XX | 00QS00300006XX | 00QS00300006XX | 00QS00500006XX | 00QS00500006XX | 00QS00500006XX | - |
| Associated Field Blank: | | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX |

Site: Fire Training Area
#: Level D Validation

PROJECT: Plattsburgh A.F.B. - Fall of 1991

Semivolatile Organic Aqueous Analysis (ug/L)

Summary Table

| ANALYTE | SOW-02/88 CRQL | MW-02-037 | MW-02-038 | MW-02-040 | MW-02-041 | MW-02-041 | MW-02-042 | MW-02-043 | MW-02-044 |
|---|---|---|---|---|---|---|---|---|---|
| ISIS ID: | | 02MW03700006XX | 02MW03800006XX | 02MW04000006XX | 02MW04100006DX | 02MW04100006XX | 02MW04200006XX | 02MW04300006XX | 02MW04400006XX |
| LAB NUMBER: | | 61128 # | 61129 # | 61598 # | 61956 # | 61955 # | 61597 # | 61957 # | 61130 # |
| DATE SAMPLED: | | 09/10/91 | 09/10/91 | 09/12/91 | 09/17/91 | 09/17/91 | 09/12/91 | 09/17/91 | 09/10/91 |
| DATE EXTRACTED: | | 09/15/91 | 09/15/91 | 09/16/91 | 09/23/91 | 09/23/91 | 09/16/91 | 09/23/91 | 09/15/91 |
| DATE ANALYZED: | | 10/04/91 | 10/01/91 | 10/21/91 | 10/21/91 | 10/21/91 | 10/24/91 | 10/21/91 | 10/04/91 |
| Phenol | 10 | - | - | - | - | 110 J | - | - | - |
| bis(2-Chloroethyl)ether | 10 | - | - | - | - | - | - | - | - |
| 2-Chlorophenol | 10 | - | - | - | - | 130 J | - | - | - |
| 1,3-Dichlorobenzene | 10 | - | - | - | - | - | - | - | - |
| 1,4-Dichlorobenzene | 10 | - | - | - | - | - | - | - | - |
| Benzyl Alcohol | 10 | - | - | - | - | - | - | - | - |
| 1,2-Dichlorobenzene | 10 | - | - | - | - | - | - | - | - |
| 2-Methylphenol | 10 | - | - | - | - | - | - | - | - |
| bis(2-Chloroisopropyl)ether | 10 | - | - | - | - | - | - | - | - |
| 4-Methylphenol | 10 | - | - | - | - | - | - | - | - |
| N-Nitroso-di-n-propylamine | 10 | - | - | - | - | - | - | - | - |
| Hexachloroethane | 10 | - | - | - | - | - | - | - | - |
| Nitrobenzene | 10 | - | - | - | - | - | - | - | - |
| Isophorone | 10 | - | - | - | - | - | - | - | - |
| 2-Nitrophenol | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dimethylphenol | 10 | - | - | - | - | - | - | - | - |
| Benzoic Acid | 50 | - | - | - | - | - | - | - | - |
| bis(2-Chloroethoxy)methane | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dichlorophenol | 10 | - | - | - | - | - | - | - | - |
| 1,2,4-Trichlorobenzene | 10 | - | - | - | - | - | - | - | - |
| Naphthalene | 10 | - | - | - | - | - | - | - | - |
| 4-Chloroaniline | 10 | - | - | - | - | - | - | - | - |
| Hexachlorobutadiene | 10 | - | - | - | - | - | - | - | - |
| 4-Chloro-3-Methylphenol | 10 | - | - | - | - | 42 J | - | - | - |
| 2-Methylnaphthalene | 10 | - | - | - | - | - | - | - | - |
| Hexachlorocyclopentadiene | 10 | - | - | - | - | - | - | - | - |
| 2,4,6-Trichlorophenol | 10 | - | - | - | - | - | - | - | - |
| 2,4,5-Trichlorophenol | 50 | - | - | - | - | - | - | - | - |
| 2-Chloronaphthalene | 10 | - | - | - | - | - | - | - | - |
| 2-Nitroaniline | 50 | - | - | - | - | - | - | - | - |
| Dimethylphthalate | 10 | - | - | - | - | - | - | - | - |
| Acenaphthylene | 10 | - | - | - | - | - | - | - | - |
| 2,6-Dinitrotoluene | 10 | - | - | - | - | - | - | - | - |

Site: Fire Training Area
#: Level D Validation

PROJECT: Plattsburgh A.F.B. - Fall of 1991

Semivolatile Organic Aqueous Analysis (ug/L)

Summary Table

| ANALYTE SOW-02/88 | CRQL | MW-02-037 | MW-02-038 | MW-02-040 | MW-02-041 | MW-02-041 | MW-02-042 | MW-02-043 | MW-02-044 |
|---|---|---|---|---|---|---|---|---|---|
| ISIS ID: | | 02MW03700006XX | 02MW03800006XX | 02MW04000006XX | 02MW04100006DX | 02MW04100006XX | 02MW04200006XX | 02MW04300006XX | 02MW04400006XX |
| LAB NUMBER: | | 61128 # | 61129 # | 61598 # | 61956 # | 61955 # | 61597 # | 61957 # | 61130 # |
| DATE SAMPLED: | | 09/10/91 | 09/10/91 | 09/12/91 | 09/17/91 | 09/17/91 | 09/12/91 | 09/17/91 | 09/10/91 |
| DATE EXTRACTED: | | 09/15/91 | 09/15/91 | 09/16/91 | 09/23/91 | 09/23/91 | 09/16/91 | 09/23/91 | 09/15/91 |
| DATE ANALYZED: | | 10/04/91 | 10/01/91 | 10/21/91 | 10/21/91 | 10/21/91 | 10/24/91 | 10/21/91 | 10/04/91 |
| 3-Nitroaniline | 50 | - | - | - | - | - | - | - | - |
| Acenaphthene | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dinitrophenol | 50 | - | - | - | - | - | - | - | - |
| 4-Nitrophenol | 50 | - | - | - | - | 150 J | - | - | - |
| Dibenzofuran | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dinitrotoluene | 10 | - | - | - | - | - | - | - | - |
| Diethylphthalate | 10 | - | - | - | - | - | - | - | - |
| 4-Chlorophenyl-phenylether | 10 | - | - | - | - | - | - | - | - |
| Fluorene | 10 | - | - | - | - | - | - | - | - |
| 4-Nitroaniline | 50 | - | - | - | - | - | - | - | - |
| 4,6-Dinitro-2-methylphenol | 50 | - | - | - | - | - | - | - | - |
| N-Nitrosodiphenylamine | 10 | - | - | - | - | - | - | - | - |
| 4-Bromophenyl-phenylether | 10 | - | - | - | - | - | - | - | - |
| Hexachlorobenzene | 10 | - | - | - | - | - | - | - | - |
| Pentachlorophenol | 50 | - | - | - | - | 140 J | - | - | - |
| Phenanthrene | 10 | - | - | - | - | - | - | - | - |
| Anthracene | 10 | - | - | - | - | - | - | - | - |
| Di-n-butylphthalate | 10 | - | - | - | - | - | - | - | - |
| Fluoranthene | 10 | - | - | - | - | - | - | - | - |
| Pyrene | 10 | - | - | - | - | - | - | - | - |
| Butylbenzylphthalate | 10 | - | - | - | - | - | - | - | - |
| 3,3'-Dichlorobenzidine | 20 | - | - | - | - | - | - | - | - |
| Benzo(a)Anthracene | 10 | - | - | - | - | - | - | - | - |
| Chrysene | 10 | - | - | - | - | - | - | - | - |
| bis(2-Ethylhexyl)phthalate | 10 | - | - | - | | - | - | - | - |
| Di-n-octylphthalate | 10 | - | - | - | | - | - | - | - |
| Benzo(b)Fluoranthene | 10 | - | - | - | - | - | - | - | - |
| Benzo(k)Fluoranthene | 10 | - | - | - | - | - | - | - | - |
| Benzo(a)Pyrene | 10 | - | - | - | - | - | - | - | - |
| Indeno(1,2,3-c,d)Pyrene | 10 | - | - | - | - | - | - | - | - |
| Dibenz(a,h)Anthracene | 10 | - | - | - | - | - | - | - | - |
| Benzo(g,h,i)perylene | 10 | - | - | - | - | - | - | - | - |
| Dilution Factor: | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Associated Method Blank: | | W5085 | W5085 | P1118 | P1254 | P1254 | P1118 | P1254 | W5085 |
| Associated Equipment Blank: | | - | - | 00QS00200006XX | - | - | 00QS00200006XX | - | - |
| Associated Field Blank: | | QD00100006XX | QD00100006XX | 00QD00100006XX | 00QD00200006XX | 00QD00200006XX | 00QD00100006XX | 00QD00200006XX | QD00100006XX |

Site: Fire Training Area
#: Level D Validation

PROJECT: Plattsburgh A.F.B. - Fall of 1991

Semivolatile Organic Aqueous Analysis (ug/L)

Summary Table

| ANALYTE SOW-02/88 | CRQL | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | LOCATION: | MW-02-045 | MW-02-045 | MW-02-046 | MW-02-047 | MW-02-048 | MW-02-048 | MW-02-049 | MW-04-001 |
| | ISIS ID: | 02MW04500006DX | 02MW04500006XX | 02MW04600006XX | 02MW04700006XX | 02MW04800006DX | 02MW04800006XX | 02MW04900006XX | 04MW00100006XX |
| | LAB NUMBER: | 61447 # | 61446 # | 61448 # | 62067 # | 62418 # | 62417 # | 61131 # | 61958 # |
| | DATE SAMPLED: | 09/11/91 | 09/11/91 | 09/11/91 | 09/18/91 | 09/20/91 | 09/20/91 | 09/10/91 | 09/17/91 |
| | DATE EXTRACTED: | 09/16/91 | 09/16/91 | 09/16/91 | 09/23/91 | 09/25/91 | 09/25/91 | 09/15/91 | 09/23/91 |
| | DATE ANALYZED: | 10/17/91 | 10/17/91 | 10/17/91 | 10/23/91 | 10/24/91 | 10/28/91 | 10/09/91 | 10/21/91 |
| Phenol | 10 | - | - | - | - | - | - | - | - |
| bis(2-Chloroethyl)ether | 10 | - | - | - | - | - | - | - | - |
| 2-Chlorophenol | 10 | - | - | - | - | - | - | - | - |
| 1,3-Dichlorobenzene | 10 | - | - | - | - | - | - | - | - |
| 1,4-Dichlorobenzene | 10 | - | - | - | - | - | - | - | - |
| Benzyl Alcohol | 10 | - | - | - | - | - | - | - | - |
| 1,2-Dichlorobenzene | 10 | - | - | - | - | - | - | - | - |
| 2-Methylphenol | 10 | - | - | - | - | - | - | - | - |
| bis(2-Chloroisopropyl)ether | 10 | - | - | - | - | - | - | - | - |
| 4-Methylphenol | 10 | - | - | - | - | - | - | - | - |
| N-Nitroso-di-n-propylamine | 10 | - | - | - | - | - | - | - | - |
| Hexachloroethane | 10 | - | - | - | - | - | - | - | - |
| Nitrobenzene | 10 | - | - | - | - | - | - | - | - |
| Isophorone | 10 | - | - | - | - | - | - | - | - |
| 2-Nitrophenol | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dimethylphenol | 10 | - | - | - | - | - | - | - | - |
| Benzoic Acid | 50 | - | - | - | - | - | - | - | - |
| bis(2-Chloroethoxy)methane | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dichlorophenol | 10 | - | - | - | - | - | - | - | - |
| 1,2,4-Trichlorobenzene | 10 | - | - | - | - | - | - | - | - |
| Naphthalene | 10 | - | - | - | - | - | - | - | - |
| 4-Chloroaniline | 10 | - | - | - | - | - | - | - | - |
| Hexachlorobutadiene | 10 | - | - | - | - | - | - | - | - |
| 4-Chloro-3-Methylphenol | 10 | - | - | - | - | - | - | - | - |
| 2-Methylnaphthalene | 10 | - | - | - | - | - | - | - | - |
| Hexachlorocyclopentadiene | 10 | - | - | - | - | - | - | - | - |
| 2,4,6-Trichlorophenol | 10 | - | - | - | - | - | - | - | - |
| 2,4,5-Trichlorophenol | 50 | - | - | - | - | - | - | - | - |
| 2-Chloronaphthalene | 10 | - | - | - | - | - | - | - | - |
| 2-Nitroaniline | 50 | - | - | - | - | - | - | - | - |
| Dimethylphthalate | 10 | - | - | - | - | - | - | - | - |
| Acenaphthylene | 10 | - | - | - | - | - | - | - | - |
| 2,6-Dinitrotoluene | 10 | - | - | - | - | - | - | - | - |

Site: Fire Training Area
#: Level D Validation

Summary Table

| ANALYTE | SOW-02/88 CRQL | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | LOCATION: | MW-02-045 | MW-02-045 | MW-02-046 | MW-02-047 | MW-02-048 | MW-02-048 | MW-02-049 | MW-04-001 |
| | ISIS ID: | 02MW04500006DX | 02MW04500006XX | 02MW04600006XX | 02MW04700006XX | 02MW04800006DX | 02MW04800006XX | 02MW04900006XX | 04MW00100006XX |
| | LAB NUMBER: | 61447 # | 61446 # | 61448 # | 62067 # | 62418 # | 62417 # | 61131 # | 61958 # |
| | DATE SAMPLED: | 09/11/91 | 09/11/91 | 09/11/91 | 09/18/91 | 09/20/91 | 09/20/91 | 09/10/91 | 09/17/91 |
| | DATE EXTRACTED: | 09/16/91 | 09/16/91 | 09/16/91 | 09/23/91 | 09/25/91 | 09/25/91 | 09/15/91 | 09/23/91 |
| | DATE ANALYZED: | 10/17/91 | 10/17/91 | 10/17/91 | 10/23/91 | 10/24/91 | 10/28/91 | 10/09/91 | 10/21/91 |
| 3-Nitroaniline | 50 | - | - | - | - | - | - | - | - |
| Acenaphthene | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dinitrophenol | 50 | - | - | - | - | - | - | - | - |
| 4-Nitrophenol | 50 | - | - | - | - | - | - | - | - |
| Dibenzofuran | 10 | - | - | - | - | - | - | - | - |
| 2,4-Dinitrotoluene | 10 | - | - | - | - | - | - | - | - |
| Diethylphthalate | 10 | - | - | - | - | - | - | - | - |
| 4-Chlorophenyl-phenylether | 10 | - | - | - | - | - | - | - | - |
| Fluorene | 10 | - | - | - | - | - | - | - | - |
| 4-Nitroaniline | 50 | - | - | - | - | - | - | - | - |
| 4,6-Dinitro-2-methylphenol | 50 | - | - | - | - | - | - | - | - |
| N-Nitrosodiphenylamine | 10 | - | - | - | - | - | - | - | - |
| 4-Bromophenyl-phenylether | 10 | - | - | - | - | - | - | - | - |
| Hexachlorobenzene | 10 | - | - | - | - | - | - | - | - |
| Pentachlorophenol | 50 | - | - | - | - | - | - | - | - |
| Phenanthrene | 10 | - | - | - | - | - | - | - | - |
| Anthracene | 10 | - | - | - | - | - | - | - | - |
| Di-n-butylphthalate | 10 | - | - | - | - | - | - | - | - |
| Fluoranthene | 10 | - | - | - | - | - | - | - | - |
| Pyrene | 10 | - | - | - | - | - | - | - | - |
| Butylbenzylphthalate | 10 | - | - | - | - | - | - | - | - |
| 3,3'-Dichlorobenzidine | 20 | - | - | - | - | - | - | - | - |
| Benzo(a)Anthracene | 10 | - | - | - | - | - | - | - | - |
| Chrysene | 10 | - | - | - | - | - | - | - | - |
| bis(2-Ethylhexyl)phthalate | 10 | - | - | - | - | - | - | - | - |
| Di-n-octylphthalate | 10 | - | - | - | - | - | - | - | - |
| Benzo(b)Fluoranthene | 10 | - | - | - | - | - | - | - | - |
| Benzo(k)Fluoranthene | 10 | - | - | - | - | - | - | - | - |
| Benzo(a)Pyrene | 10 | - | - | - | - | - | - | - | - |
| Indeno(1,2,3-c,d)Pyrene | 10 | - | - | - | - | - | - | - | - |
| Dibenz(a,h)Anthracene | 10 | - | - | - | - | - | - | - | - |
| Benzo(g,h,i)perylene | 10 | - | - | - | - | - | - | - | - |
| Dilution Factor: | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Associated Method Blank: | | P1118 | P1118 | P1118 | P1254 | P1175 | P1175 | T1818 | P1254 |
| Associated Equipment Blank: | | 00QS00200006XX | 00QS00200006XX | 00QS00200006XX | 00QS00300006XX | 00QS00500006XX | 00QS00500006XX | - | - |
| Associated Field Blank: | | 00QD00100006XX | 00QD00100006XX | 00QD00100006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | QD00100006XX | 00QD00200006XX |

Site: Fire Training Area
#: Level D Validation

PROJECT: Plattsburgh A.F.B. - Fall of 1991

Semivolatile Organic Aqueous Analysis (ug/L)

Summary Table

| ANALYTE SOW-02/88 | CRQL | | | | | |
|---|---|---|---|---|---|---|
| | LOCATION: | MW-04-004 | MW-04-005 | MW-04-006 | MW-13-002 | MW-16-001 |
| | ISIS ID: | 04MW00400006XX | 04MW00500006XX | 04MW00600006XX | 13MW00200006XX | 16MW00100006XX |
| | LAB NUMBER: | 61959 # | 61595 # | 61960 # | 62069 # | 61594 # |
| | DATE SAMPLED: | 09/17/91 | 09/12/91 | 09/17/91 | 09/18/91 | 09/12/91 |
| | DATE EXTRACTED: | 09/23/91 | 09/16/91 | 10/09/91 | 09/23/91 | 09/16/91 |
| | DATE ANALYZED: | 10/23/91 | 10/17/91 | 10/23/91 | 10/25/91 | 10/17/91 |
| Phenol | 10 | - | - | R | - | - |
| bis(2-Chloroethyl)ether | 10 | - | - | R | - | - |
| 2-Chlorophenol | 10 | - | - | R | - | - |
| 1,3-Dichlorobenzene | 10 | - | - | R | - | - |
| 1,4-Dichlorobenzene | 10 | - | - | R | - | - |
| Benzyl Alcohol | 10 | - | - | R | - | - |
| 1,2-Dichlorobenzene | 10 | - | - | R | - | - |
| 2-Methylphenol | 10 | - | - | R | - | - |
| bis(2-Chloroisopropyl)ether | 10 | - | - | R | - | - |
| 4-Methylphenol | 10 | - | - | R | - | - |
| N-Nitroso-di-n-propylamine | 10 | - | - | R | - | - |
| Hexachloroethane | 10 | - | - | R | - | - |
| Nitrobenzene | 10 | - | - | R | - | - |
| Isophorone | 10 | - | - | R | - | - |
| 2-Nitrophenol | 10 | - | - | R | - | - |
| 2,4-Dimethylphenol | 10 | - | - | R | - | - |
| Benzoic Acid | 50 | - | - | R | - | - |
| bis(2-Chloroethoxy)methane | 10 | - | - | R | - | - |
| 2,4-Dichlorophenol | 10 | - | - | R | - | - |
| 1,2,4-Trichlorobenzene | 10 | - | - | R | - | - |
| Naphthalene | 10 | - | - | R | - | - |
| 4-Chloroaniline | 10 | - | - | R | - | - |
| Hexachlorobutadiene | 10 | - | - | R | - | - |
| 4-Chloro-3-Methylphenol | 10 | - | - | R | - | - |
| 2-Methylnaphthalene | 10 | - | - | R | - | - |
| Hexachlorocyclopentadiene | 10 | - | - | R | - | - |
| 2,4,6-Trichlorophenol | 10 | - | - | R | - | - |
| 2,4,5-Trichlorophenol | 50 | - | - | R | - | - |
| 2-Chloronaphthalene | 10 | - | - | R | - | - |
| 2-Nitroaniline | 50 | - | - | R | - | - |
| Dimethylphthalate | 10 | - | - | R | - | - |
| Acenaphthylene | 10 | - | - | R | - | - |
| 2,6-Dinitrotoluene | 10 | - | - | R | - | - |

Site: Fire Training Area
#: Level D Validation

Summary Table

| ANALYTE | SOW-02/88 CRQL | MW-04-004 | MW-04-005 | MW-04-006 | MW-13-002 | MW-16-001 |
|---|---|---|---|---|---|---|
| | ISIS ID: | 04MW00400006XX | 04MW00500006XX | 04MW00600006XX | 13MW00200006XX | 16MW00100006XX |
| | LAB NUMBER: | 61959 # | 61595 # | 61960 # | 62069 # | 61594 # |
| | DATE SAMPLED: | 09/17/91 | 09/12/91 | 09/17/91 | 09/18/91 | 09/12/91 |
| | DATE EXTRACTED: | 09/23/91 | 09/16/91 | 10/09/91 | 09/23/91 | 09/16/91 |
| | DATE ANALYZED: | 10/23/91 | 10/17/91 | 10/23/91 | 10/25/91 | 10/17/91 |
| 3-Nitroaniline | 50 | - | - | R | - | - |
| Acenaphthene | 10 | - | - | R | - | - |
| 2,4-Dinitrophenol | 50 | - | - | R | - | - |
| 4-Nitrophenol | 50 | - | - | R | - | - |
| Dibenzofuran | 10 | - | - | R | - | - |
| 2,4-Dinitrotoluene | 10 | - | - | R | - | - |
| Diethylphthalate | 10 | - | - | R | - | - |
| 4-Chlorophenyl-phenylether | 10 | - | - | R | - | - |
| Fluorene | 10 | - | - | R | - | - |
| 4-Nitroaniline | 50 | - | - | R | - | - |
| 4,6-Dinitro-2-methylphenol | 50 | - | - | R | - | - |
| N-Nitrosodiphenylamine | 10 | - | - | R | - | - |
| 4-Bromophenyl-phenylether | 10 | - | - | R | - | - |
| Hexachlorobenzene | 10 | - | - | R | - | - |
| Pentachlorophenol | 50 | - | - | R | - | - |
| Phenanthrene | 10 | - | - | R | - | - |
| Anthracene | 10 | - | - | R | - | - |
| Di-n-butylphthalate | 10 | - | - | R | - | - |
| Fluoranthene | 10 | - | - | R | - | - |
| Pyrene | 10 | - | - | R | - | - |
| Butylbenzylphthalate | 10 | - | - | R | - | - |
| 3,3'-Dichlorobenzidine | 20 | - | - | R | - | - |
| Benzo(a)Anthracene | 10 | - | - | R | - | - |
| Chrysene | 10 | - | - | R | - | - |
| bis(2-Ethylhexyl)phthalate | 10 | - | - | R | - | - |
| Di-n-octylphthalate | 10 | - | - | R | - | - |
| Benzo(b)Fluoranthene | 10 | - | - | R | - | - |
| Benzo(k)Fluoranthene | 10 | - | - | R | - | - |
| Benzo(a)Pyrene | 10 | - | - | R | - | - |
| Indeno(1,2,3-c,d)Pyrene | 10 | - | - | R | - | - |
| Dibenz(a,h)Anthracene | 10 | - | - | R | - | - |
| Benzo(g,h,i)perylene | 10 | - | - | R | - | - |
| Dilution Factor: | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Associated Method Blank: | | P1254 | P1118 | P1174 | P1254 | P1118 |
| Associated Equipment Blank: | | - | 00QS00200006XX | - | 00QS00300006XX | 00QS00200006XX |
| Associated Field Blank: | | 00QD00200006XX | 00QD00100006XX | 00QD00200006XX | 00QD00200006XX | 00QD00100006XX |

Site: Fire Training Area
#: Level D Validation

PROJECT: Plattsburgh A.F.B. - Fall of 1991 Inorganic Aqueous Analysis (ug/L)

Summary Table

| ANALYTE | SOW-07/88 CRQL | MW-02-001 | MW-02-001 | MW-02-003 | MW-02-003 | MW-02-004 | MW-02-004 | MW-02-005 | MW-02-005 |
|---|---|---|---|---|---|---|---|---|---|
| ISIS ID: | | 02MW00100006XX | 02MW00100006XX | 02MW00300006XX | 02MW00300006XX | 02MW00400006XX | 02MW00400006XX | 02MW00500006XX | 02MW00500006XX |
| LAB NUMBER: | | 62434 # | 62445 # F | 62494 # F | 62501 # | 62142 # F | 62150 # | 62143 # F | 62151 # |
| DATE SAMPLED: | | 09/20/91 | 09/20/91 | 09/21/91 | 09/21/91 | 09/19/91 | 09/19/91 | 09/19/91 | 09/19/91 |
| Aluminum | 200 | 3610 | - | NR | NR | - | - | - | - |
| Antimony | 60 | - | - | NR | NR | - | - | - | - |
| Arsenic | 10 | - | - | NR | NR | - | - | - | - |
| Barium | 200 | - | - | NR | NR | - | - | - | - |
| Beryllium | 5 | - | - | NR | NR | - | - | - | - |
| Cadmium | 5 | - | - | NR | NR | - | - | - | - |
| Calcium | 5000 | 47200 | 44000 | NR | NR | - | - | - | - |
| Chromium | 10 | - | - | NR | NR | - | - | - | - |
| Cobalt | 50 | - | - | NR | NR | - | - | - | - |
| Copper | 25 | - | - | NR | NR | - | - | - | - |
| Iron | 100 | 5730 | - | NR | NR | - | - | - | - |
| Lead | 3 | - | - | - | - | - | - | - | - |
| Magnesium | 5000 | 16900 | 15000 | NR | NR | - | - | - | - |
| Manganese | 15 | 110 | - | NR | NR | - | - | - | - |
| Mercury | 0.2 | - | - | NR | NR | - | - | - | - |
| Nickel | 40 | - | - | NR | NR | - | - | - | - |
| Potassium | 5000 | - | - | NR | NR | - | - | - | - |
| Selenium | 5 | - | - | NR | NR | - | - | - | - |
| Silver | 10 | - | - | NR | NR | - | - | - | - |
| Sodium | 5000 | - | - | NR | NR | - | - | - | - |
| Thallium | 10 | - | - | NR | NR | - | - | - | - |
| Vanadium | 50 | - | - | NR | NR | - | - | - | - |
| Zinc | 20 | - | - | NR | NR | - | - | - | - |
| Cyanide | 10 | - | - | NR | NR | - | - | - | - |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Associated Method Blank: | PBW33 | PBW33 | PBW34 | PBW34 | PBW32 | PBW32 | PBW32 | PBW32 |
| Associated Equipment Blank: | 00QS00500006XX | 00QS00500006XX | - | - | 00QS00400006XX | 00QS00400006XX | 00QS00400006XX | 00QS00400006XX |
| Associated Field Blank: | - | - | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX |

Site: Fire Training Area
#: Level D Validation
F: Filtered Sample

Summary Table

| ANALYTE | SOW-07/88 CRQL | MW-02-007 | MW-02-007 | MW-02-009 | MW-02-009 | MW-02-010 | MW-02-010 | MW-02-011 | MW-02-011 |
|---|---|---|---|---|---|---|---|---|---|
| ISIS ID: | | 02MW00700006XX | 02MW00700006XX | 02MW00900006XX | 02MW00900006XX | 02MW01000006XX | 02MW01000006XX | 02MW01100006XX | 02MW01100006XX |
| LAB NUMBER: | | 62491 # F | 62498 # | 62148 # F | 62157 # | 62145 # F | 62154 # | 62492 # F | 62499 # |
| DATE SAMPLED: | | 09/21/91 | 09/21/91 | 09/19/91 | 09/19/91 | 09/19/91 | 09/19/91 | 09/21/91 | 09/21/91 |
| Aluminum | 200 | - | 1590 | - | - | - | - | - | - |
| Antimony | 60 | - | - | - | - | - | - | - | - |
| Arsenic | 10 | - | - | - | - | - | - | - | - |
| Barium | 200 | - | - | - | - | - | - | - | - |
| Beryllium | 5 | - | - | - | - | - | - | - | - |
| Cadmium | 5 | - | - | - | - | - | - | - | - |
| Calcium | 5000 | 27500 | 33100 | - | - | - | - | 47000 | 48800 |
| Chromium | 10 | - | - | - | - | - | - | - | 143 |
| Cobalt | 50 | - | - | - | - | - | - | - | - |
| Copper | 25 | - | - | - | - | - | - | - | - |
| Iron | 100 | - | 1980 | - | - | - | - | 589 | 1580 |
| Lead | 3 | - | - | - | - | - | - | - | - |
| Magnesium | 5000 | 8720 | 9660 | - | - | - | - | 13700 | 13800 |
| Manganese | 15 | 90.5 | 141 | - | - | - | - | 299 | 328 |
| Mercury | 0.2 | - | - | - | - | - | - | - | - |
| Nickel | 40 | - | - | - | - | - | - | 50.2 | 56.6 |
| Potassium | 5000 | - | - | - | - | - | - | - | - |
| Selenium | 5 | - | - | - | - | - | - | - | - |
| Silver | 10 | - | - | - | - | - | - | - | - |
| Sodium | 5000 | - | - | - | - | - | - | 42100 | 43500 |
| Thallium | 10 | - | - | - | - | - | - | - | - |
| Vanadium | 50 | - | - | - | - | - | - | - | - |
| Zinc | 20 | - | - | - | - | - | - | - | - |
| Cyanide | 10 | - | - | - | - | - | - | - | - |
| Associated Method Blank: | | PBW34 | PBW34 | PBW32 | PBW32 | PBW32 | PBW32 | PBW34 | PBW34 |
| Associated Equipment Blank: | | - | - | 00QS00400006XX | 00QS00400006XX | 00QS00400006XX | 00QS00400006XX | - | - |
| Associated Field Blank: | | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX | 00QD00200006XX |

Site: Fire Training Area
#: Level D Validation
F: Filtered Sample

PROJECT: Plattsb .F.B. - Fall of 1991 Inorganic Aqueous Analysis (ug/L)

Summary Table

| ANALYTE SOW-07/88 | CRQL | MW-02-016 | MW-02-016 | MW-02-017 | MW-02-017 | MW-02-019 | MW-02-019 | MW-02-020 | MW-02-020 |
|---|---|---|---|---|---|---|---|---|---|
| ISIS ID: | | 02MW01600006XX | 02MW01600006XX | 02MW01700006XX | 02MW01700006XX | 02MW01900006XX | 02MW01900006XX | 02MW02000006XX | 02MW02000006XX |
| LAB NUMBER: | | 62433 # | 62444 # F | 62430 # | 62441 # F | 62437 # | 62448 # F | 62438 # | 62449 # F |
| DATE SAMPLED: | | 09/20/91 | 09/20/91 | 09/20/91 | 09/20/91 | 09/20/91 | 09/20/91 | 09/20/91 | 09/20/91 |
| Aluminum | 200 | 209 | - | 2130 | - | - | - | - | - |
| Antimony | 60 | - | - | - | - | - | - | - | - |
| Arsenic | 10 | - | - | - | - | - | - | 11.6 | 13.7 |
| Barium | 200 | - | - | - | - | - | - | - | - |
| Beryllium | 5 | - | - | - | - | - | - | - | - |
| Cadmium | 5 | - | - | - | - | - | - | - | - |
| Calcium | 5000 | 174000 | - | 79800 | 76600 | 70600 | 71100 | 82400 | 85100 |
| Chromium | 10 | - | - | - | - | - | - | - | - |
| Cobalt | 50 | - | - | - | - | - | - | - | - |
| Copper | 25 | - | - | - | - | - | - | - | - |
| Iron | 100 | 5930 | - | 3320 | - | 15400 | 16300 | 17900 | 18700 |
| Lead | 3 | - | - | - | - | - | - | - | - |
| Magnesium | 5000 | 26400 | 26200 | 20500 | 19000 | 15300 | 15000 | 18500 | 18800 |
| Manganese | 15 | 2740 | 2750 | 250 | - | 151 J | 198 J | 224 | 215 |
| Mercury | 0.2 | - | - | - | - | - | - | - | - |
| Nickel | 40 | - | - | - | - | - | - | - | - |
| Potassium | 5000 | - | - | - | - | - | - | - | - |
| Selenium | 5 | - | - | - | - | - | - | - | - |
| Silver | 10 | - | - | - | - | - | - | - | - |
| Sodium | 5000 | 27200 | 26400 | - | - | 10600 | 11100 | 8110 | 8390 |
| Thallium | 10 | - | - | - | - | - | - | - | - |
| Vanadium | 50 | - | - | - | - | - | - | - | - |
| Zinc | 20 | - | - | - | - | - | - | - | - |
| Cyanide | 10 | - | - | - | - | - | - | - | - |
| Associated Method Blank: | | PBW33 | PBW33 | PBW33 | PBW33 | PBW33 | PBW33 | PBW33 | PBW33 |
| Associated Equipment Blank: | | 00QS00500006XX | 00QS00500006XX | 00QS00500006XX | 00QS00500006XX | 00QS00500006XX | 00QS00500006XX | 00QS00500006XX | 00QS00500006XX |
| Associated Field Blank: | | - | - | - | - | - | - | - | - |

Site: Fire Training Area
#: Level D Validation
F: Filtered Sample

Summary Table

| ANALYTE | SOW-07/88 CRQL | MW-02-021 | MW-02-021 | MW-02-022 | MW-02-022 | MW-02-022 | MW-02-022 | MW-02-023 | MW-02-023 |
|---|---|---|---|---|---|---|---|---|---|
| ISIS ID: | | 02MW02100006XX | 02MW02100006XX | 02MW02200006DX | 02MW02200006DX | 02MW02200006XX | 02MW02200006XX | 02MW02300006XX | 02MW02300006XX |
| LAB NUMBER: | | 62081 # F | 62090 # | 62083 # F | 62092 # | 62082 # F | 62091 # | 62079 # F | 62088 # |
| DATE SAMPLED: | | 09/18/91 | 09/18/91 | 09/18/91 | 09/18/91 | 09/18/91 | 09/18/91 | 09/18/91 | 09/18/91 |
| Aluminum | 200 | - | - | - | 3550 | - | 4980 | - | - |
| Antimony | 60 | - | - | - | - | - | - | - | - |
| Arsenic | 10 | - | - | - | - | - | - | - | - |
| Barium | 200 | - | - | - | - | - | - | - | - |
| Beryllium | 5 | - | - | - | - | - | - | - | - |
| Cadmium | 5 | - | - | - | - | - | - | - | - |
| Calcium | 5000 | 64800 | 62000 | 63900 | 60100 | 62900 | 66600 | 39500 | 40100 |
| Chromium | 10 | 33.5 | 38.1 | 39.8 | 40.8 | 32.0 | 48.3 | 26.6 | 28.2 |
| Cobalt | 50 | - | - | - | - | - | - | - | - |
| Copper | 25 | - | - | - | - | - | - | - | - |
| Iron | 100 | 105 | 655 | 469 | 5190 | 406 | 6100 | 112 | 182 |
| Lead | 3 | - | - | - | - | - | - | - | - |
| Magnesium | 5000 | 30500 J | 29300 | 27100 | 26400 | 26600 | 29000 | 14400 | 14500 |
| Manganese | 15 | 115 | 110 | 246 | 307 | 241 | 338 | 66.4 | 69.4 |
| Mercury | 0.2 | - | - | - | - | - | - | - | - |
| Nickel | 40 | - | - | - | - | - | - | - | - |
| Potassium | 5000 | - | - | - | - | - | - | - | - |
| Selenium | 5 | - | - | - | - | - | - | - | - |
| Silver | 10 | - | - | - | - | - | - | - | - |
| Sodium | 5000 | 5500 | 5340 | - | - | - | 5260 | - | - |
| Thallium | 10 | - | - | - | - | - | - | - | - |
| Vanadium | 50 | - | - | - | - | - | - | - | - |
| Zinc | 20 | - | - | - | - | - | - | - | - |
| Cyanide | 10 | - | - | - | - | - | - | - | - |
| Associated Method Blank: | | PB5530W | PB5530W | PB5530W | PB5530W | PB5530W | PB5530W | PB5530W | PB5530W |
| Associated Equipment Blank: | | 00QS00300006XX | 00QS00300006XX | 00QS00300006XX | 00QS00300006XX | 00QS00300006XX | 00QS00300006XX | 00QS00300006XX | 00QS00300006XX |
| Associated Field Blank: | | - | - | - | - | - | - | - | - |

Site: Fire Training Area
#: Level D Validation
F: Filtered Sample

PROJECT: Plattsburgh A.F.B. - Fall of 1991 Inorganic Aqueous Analysis (ug/L)

Summary Table

| ANALYTE | SOW-07/88 CRQL | LOCATION: MW-02-024<br>ISIS ID: 02MW02400006XX<br>LAB NUMBER: 62149 # F<br>DATE SAMPLED: 09/19/91 | MW-02-024<br>02MW02400006XX<br>62158 #<br>09/19/91 | MW-02-026<br>02MW02600006XX<br>62432 #<br>09/20/91 | MW-02-026<br>02MW02600006XX<br>62443 # F<br>09/20/91 | MW-02-027<br>02MW02700006XX<br>62431 #<br>09/20/91 | MW-02-027<br>02MW02700006XX<br>62442 # F<br>09/20/91 | MW-02-028<br>02MW02800006XX<br>62147 # F<br>09/19/91 | MW-02-028<br>02MW02800006XX<br>62156 #<br>09/19/91 |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 200 | - | - | - | - | - | - | - | - |
| Antimony | 60 | - | - | - | - | - | - | - | - |
| Arsenic | 10 | - | - | - | - | - | - | - | - |
| Barium | 200 | - | - | - | - | 3290 | 3460 | - | - |
| Beryllium | 5 | - | - | - | - | - | - | - | - |
| Cadmium | 5 | - | - | - | - | - | - | - | - |
| Calcium | 5000 | - | - | 48100 | 47500 | 652000 J | 725000 J | - | - |
| Chromium | 10 | - | - | - | - | - | - | - | - |
| Cobalt | 50 | - | - | - | - | - | - | - | - |
| Copper | 25 | - | - | - | - | - | - | - | - |
| Iron | 100 | - | - | 153 | - | - | - | - | - |
| Lead | 3 | - | - | - | - | - | - | - | - |
| Magnesium | 5000 | - | - | 17300 | 17000 | - | - | - | - |
| Manganese | 15 | - | - | - | - | - | - | - | - |
| Mercury | 0.2 | - | - | - | - | - | - | - | - |
| Nickel | 40 | - | - | - | - | - | - | - | - |
| Potassium | 5000 | - | - | - | - | 139000 | 115000 | - | - |
| Selenium | 5 | - | - | - | - | - | - | - | - |
| Silver | 10 | - | - | - | - | - | - | - | - |
| Sodium | 5000 | - | - | 104000 | 102000 | 99500 | 82600 | - | - |
| Thallium | 10 | - | - | - | - | - | - | - | - |
| Vanadium | 50 | - | - | - | - | - | - | - | - |
| Zinc | 20 | - | - | - | - | - | - | - | - |
| Cyanide | 10 | - | - | - | - | - | - | - | - |
| Associated Method Blank: | | PBW32 | PBW32 | PBW33 | PBW33 | PBW33 | PBW33 | PBW32 | PBW32 |
| Associated Equipment Blank: | | 00QS00400006XX | 00QS00400006XX | 00QS00500006XX | 00QS00500006XX | 00QS00500006XX | 00QS00500006XX | 00QS00400006XX | 00QS00400006XX |
| Associated Field Blank: | | 00QD00200006XX | 00QD00200006XX | - | - | - | - | 00QD00200006XX | 00QD00200006XX |

Site: Fire Training Area
#: Level D Validation
F: Filtered Sample

Summary Table

| ANALYTE | SOW-07/88 CRQL | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | LOCATION: | MW-02-029 | MW-02-029 | MW-02-030 | MW-02-030 | MW-02-031 | MW-02-031 | MW-02-037 | MW-02-037 |
| | ISIS ID: | 02MW02900006XX | 02MW02900006XX | 02MW03000006XX | 02MW03000006XX | 02MW03100006XX | 02MW03100006XX | 02MW03700006XX | 02MW03700006XX |
| | LAB NUMBER: | 62146 # F | 62155 # | 62436 # | 62447 # F | 62493 # F | 62500 # | 61132 # | 61136 # F |
| | DATE SAMPLED: | 09/19/91 | 09/19/91 | 09/20/91 | 09/20/91 | 09/21/91 | 09/21/91 | 09/10/91 | 09/10/91 |
| Aluminum | 200 | - | - | - | - | - | - | - | - |
| Antimony | 60 | - | - | - | - | - | - | - | - |
| Arsenic | 10 | - | - | - | - | 21.5 J | 20.6 J | - | - |
| Barium | 200 | - | - | - | - | - | - | - | - |
| Beryllium | 5 | - | - | - | - | - | - | - | - |
| Cadmium | 5 | - | - | - | - | - | - | - | - |
| Calcium | 5000 | - | - | 37000 | 37000 | 112000 | 111000 | 67900 | 66300 |
| Chromium | 10 | - | - | - | - | - | - | - | - |
| Cobalt | 50 | - | - | - | - | - | - | - | - |
| Copper | 25 | - | - | - | - | - | - | - | - |
| Iron | 100 | - | - | 238 | - | 23400 | 23200 | - | - |
| Lead | 3 | - | - | - | - | - | - | - | - |
| Magnesium | 5000 | - | - | 13200 | 13200 | 17000 | 16900 | 25500 | 25500 |
| Manganese | 15 | - | - | 154 | 148 | 104 | 104 | - | - |
| Mercury | 0.2 | - | - | - | - | - | - | - | - |
| Nickel | 40 | - | - | - | - | - | - | - | - |
| Potassium | 5000 | - | - | - | - | - | - | - | - |
| Selenium | 5 | - | - | - | - | - | - | - | - |
| Silver | 10 | - | - | - | - | - | - | - | - |
| Sodium | 5000 | - | - | - | - | 9530 | 9350 | 11400 | 10500 |
| Thallium | 10 | - | - | - | - | - | - | - | - |
| Vanadium | 50 | - | - | - | - | - | - | - | - |
| Zinc | 20 | - | - | - | - | - | - | - | - |
| Cyanide | 10 | - | - | - | - | - | - | - | - |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Associated Method Blank: | PBW32 | PBW32 | PBW33 | PBW33 | PBW34 | PBW34 | PBLK26,27 | PBLK26,27 |
| Associated Equipment Blank: | 00QS00400006XX | 00QS00400006XX | 00QS00500006XX | 00QS00500006XX | - | - | - | - |
| Associated Field Blank: | 00QD00200006XX | 00QD00200006XX | - | - | 00QD00200006XX | 00QD00200006XX | 00QD00100006XX | - |

Site: Fire Training Area
#: Level D Validation
F: Filtered Sample

PROJECT: Plattsburgh A.F.B. - Fall of 1991 Inorganic Aqueous Analysis (ug/L)

Summary Table

| ANALYTE | SOW-07/88 CRQL | MW-02-038 | MW-02-038 | MW-02-039 | MW-02-039 | MW-02-040 | MW-02-040 | MW-02-041 | MW-02-041 |
|---|---|---|---|---|---|---|---|---|---|
| ISIS ID: | | 02MW03800006XX | 02MW03800006XX | 02MW03900006XX | 02MW03900006XX | 02MW04000006XX | 02MW04000006XX | 02MW04100006DX | 02MW04100006DX |
| LAB NUMBER: | | 61133 # | 61137 # F | 61961 # | 61968 # F | 61603 # F | 61608 # | 61963 # | 61970 # F |
| DATE SAMPLED: | | 09/10/91 | 09/10/91 | 09/17/91 | 09/17/91 | 09/12/91 | 09/12/91 | 09/17/91 | 09/17/91 |
| Aluminum | 200 | - | - | - | - | - | - | - | - |
| Antimony | 60 | - | - | - | - | - | - | - | - |
| Arsenic | 10 | - | - | - | - | - | - | - | - |
| Barium | 200 | - | - | - | - | - | - | - | - |
| Beryllium | 5 | - | - | - | - | - | - | - | - |
| Cadmium | 5 | - | - | - | - | - | - | - | - |
| Calcium | 5000 | 77000 | 75300 | 55000 | 55400 | 66900 | 67400 | 91800 | 93200 |
| Chromium | 10 | - | - | - | - | - | - | - | - |
| Cobalt | 50 | - | - | - | - | - | - | - | - |
| Copper | 25 | - | - | - | - | - | - | - | - |
| Iron | 100 | 819 | 891 | - | - | - | - | - | - |
| Lead | 3 | - | - | - | - | - | - | - | - |
| Magnesium | 5000 | 31000 | 32200 | 21500 | 21600 | 20200 | 20400 | 45500 | 45900 |
| Manganese | 15 | 238 | 243 | 74.1 | 76.6 | - | - | 194 | 146 |
| Mercury | 0.2 | - | - | - | - | - | - | - | - |
| Nickel | 40 | - | - | - | - | - | - | - | - |
| Potassium | 5000 | - | - | - | - | - | - | - | - |
| Selenium | 5 | - | - | - | - | - | - | - | - |
| Silver | 10 | - | - | - | - | - | - | - | - |
| Sodium | 5000 | 66600 | 67900 | - | - | - | - | 8430 | 8430 |
| Thallium | 10 | - | - | - | - | - | - | - | - |
| Vanadium | 50 | - | - | - | - | - | - | - | - |
| Zinc | 20 | - | - | - | - | - | - | - | - |
| Cyanide | 10 | - | - | - | - | - | - | - | - |
| Associated Method Blank: | | PBLK26,27 | PBLK26,27 | PBW30 | PBW30 | PBLK28,29 | PBLK28,29 | PBW30 | PBW30 |
| Associated Equipment Blank: | | - | - | - | - | 00QS00200006XX | 00QS00200006XX | - | - |
| Associated Field Blank: | | 00QD00100006XX | - | 00QD00200006XX | 00QD00200006XX | - | 00QD00100006XX | 00QD00200006XX | 00QD00200006XX |

Site: Fire Training Area
#: Level D Validation
F: Filtered Sample

Summary Table

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | LOCATION: | MW-02-041 | MW-02-041 | MW-02-042 | MW-02-042 | MW-02-043 | MW-02-043 | MW-02-044 | MW-02-044 |
| | | ISIS ID: | 02MW04100006XX | 02MW04100006XX | 02MW04200006XX | 02MW04200006XX | 02MW04300006XX | 02MW04300006XX | 02MW04400006XX | 02MW04400006XX |
| | | LAB NUMBER: | 61962 # | 61969 # F | 61602 # F | 61607 # | 61964 # | 61971 # F | 61134 # | 61138 # F |
| | | DATE SAMPLED: | 09/17/91 | 09/17/91 | 09/12/91 | 09/12/91 | 09/17/91 | 09/17/91 | 09/10/91 | 09/10/91 |
| ANALYTE | SOW-07/88 | CRQL | | | | | | | | |
| Aluminum | | 200 | - | - | - | - | - | - | - | - |
| Antimony | | 60 | - | - | - | - | - | - | - | - |
| Arsenic | | 10 | - | - | - | - | - | - | - | - |
| Barium | | 200 | - | - | - | - | - | - | - | - |
| Beryllium | | 5 | - | - | - | - | - | - | - | - |
| Cadmium | | 5 | - | - | - | - | - | - | - | - |
| Calcium | | 5000 | 91100 | 92000 | 39100 | 42000 | 89500 | 89100 | 121000 | 123000 |
| Chromium | | 10 | - | - | - | - | - | - | 12.9 | - |
| Cobalt | | 50 | - | - | - | - | - | - | - | - |
| Copper | | 25 | - | - | - | - | - | - | - | - |
| Iron | | 100 | - | - | 533 | 584 | 199 | - | - | - |
| Lead | | 3 | - | - | - | - | 8.2 | - | - | - |
| Magnesium | | 5000 | 45200 | 45600 | 12700 | 13600 | 28000 | 27800 | 32700 | 32400 |
| Manganese | | 15 | 153 | 145 | 338 | 362 | 297 | 284 | 213 | 232 |
| Mercury | | 0.2 | - | - | - | - | - | - | - | - |
| Nickel | | 40 | - | - | - | - | - | - | - | - |
| Potassium | | 5000 | - | - | - | - | - | - | - | - |
| Selenium | | 5 | - | - | - | - | - | - | - | - |
| Silver | | 10 | - | - | - | - | - | - | - | - |
| Sodium | | 5000 | 8350 | 8450 | - | - | - | - | - | 5690 |
| Thallium | | 10 | - | - | - | - | - | - | - | - |
| Vanadium | | 50 | - | - | - | - | - | - | - | - |
| Zinc | | 20 | - | - | - | - | - | - | - | - |
| Cyanide | | 10 | - | - | - | - | - | - | - | - |
| Associated Method Blank: | | | PBW30 | PBW30 | PBLK28,29 | PBLK28,29 | PBW30 | PBW30 | PBLK26,27 | PBLK26,27 |
| Associated Equipment Blank: | | | - | - | 00QS00200006XX | 00QS00200006XX | - | - | - | - |
| Associated Field Blank: | | | 00QD00200006XX | 00QD00200006XX | - | 00QD00100006XX | 00QD00200006XX | 00QD00200006XX | 00QD00100006XX | - |

Site: Fire Training Area
#: Level D Validation
F: Filtered Sample

PROJECT: Plattsburgh A.F.B. - Fall of 1991

Inorganic Aqueous Analysis (ug/L)

Summary Table

| ANALYTE | SOW-07/88 CRQL | MW-02-045 | MW-02-045 | MW-02-045 | MW-02-045 | MW-02-046 | MW-02-046 | MW-02-047 | MW-02-047 |
|---|---|---|---|---|---|---|---|---|---|
| ISIS ID: | | 02MW04500006DX | 02MW04500006DX | 02MW04500006XX | 02MW04500006XX | 02MW04600006XX | 02MW04600006XX | 02MW04700006XX | 02MW04700006XX |
| LAB NUMBER: | | 61451 # | 61516 # F | 61450 # | 61515 # F | 61452 # | 61517 # F | 62078 # F | 62087 # |
| DATE SAMPLED: | | 09/11/91 | 09/11/91 | 09/11/91 | 09/11/91 | 09/11/91 | 09/11/91 | 09/18/91 | 09/18/91 |
| Aluminum | 200 | - | - | - | - | - | - | - | - |
| Antimony | 60 | - | - | - | - | - | - | - | - |
| Arsenic | 10 | - | - | - | - | - | - | - | - |
| Barium | 200 | - | - | - | - | - | - | - | - |
| Beryllium | 5 | - | - | - | - | - | - | - | - |
| Cadmium | 5 | - | - | - | - | - | - | - | - |
| Calcium | 5000 | 76100 | 75600 | 75800 | 75200 | 56400 | 54600 | 62900 | 63300 |
| Chromium | 10 | 75.3 J | - | - | - | - | - | 33.7 | 36.6 |
| Cobalt | 50 | - | - | - | - | - | - | - | - |
| Copper | 25 | - | - | - | - | - | - | - | - |
| Iron | 100 | 5020 | 4120 | 4540 | 4390 | - | 628 | - | - |
| Lead | 3 | - | - | - | - | - | - | - | - |
| Magnesium | 5000 | 25100 | 26100 | 26000 | 26100 | 20200 | 19700 | 19600 | 19900 |
| Manganese | 15 | 739 | 672 | 711 | 702 | 333 | 319 | 242 | 243 |
| Mercury | 0.2 | - | - | - | - | 0.21 | - | - | - |
| Nickel | 40 | 40.3 | - | - | - | - | - | - | - |
| Potassium | 5000 | - | - | - | - | - | - | - | - |
| Selenium | 5 | - | - | - | - | - | - | - | - |
| Silver | 10 | - | - | - | - | - | - | - | - |
| Sodium | 5000 | - | - | - | - | 10300 | 10100 | 23200 | 23800 |
| Thallium | 10 | - | - | - | - | - | - | - | - |
| Vanadium | 50 | - | - | - | - | - | - | - | - |
| Zinc | 20 | - | - | - | - | - | - | - | - |
| Cyanide | 10 | - | - | - | - | - | - | - | - |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Associated Method Blank: | PBLK26,27 | PBLK26,27 | PBLK26,27 | PBLK26,27 | PBLK26,27 | PBLK26,27 | PB5530W | PB5530W |
| Associated Equipment Blank: | 00QS00100006XX | 00QS00100006XX | 00QS00100006XX | 00QS00100006XX | 00QS00100006XX | 00QS00100006XX | 00QS00300006XX | 00QS00300006XX |
| Associated Field Blank: | 00QD00100006XX | - | 00QD00100006XX | - | 00QD00100006XX | - | - | - |

Site: Fire Training Area
#: Level D Validation
F: Filtered Sample

PROJECT: Plattsburgh A.F.B. - Fall of 1991

Inorganic Aqueous Analysis (ug/L)

Summary Table

| ANALYTE | SOW-07/88 CRQL | MW-02-048 | MW-02-048 | MW-02-048 | MW-02-048 | MW-02-049 | MW-02-049 | MW-04-001 | MW-04-001 |
|---|---|---|---|---|---|---|---|---|---|
| ISIS ID: | | 02MW04800006DX | 02MW04800006DX | 02MW04800006XX | 02MW04800006XX | 02MW04900006XX | 02MW04900006XX | 04MW00100006XX | 04MW00100006XX |
| LAB NUMBER: | | 62429 # | 62440 # F | 62428 # | 62439 # F | 61135 # | 61139 # F | 61965 # | 61972 # F |
| DATE SAMPLED: | | 09/20/91 | 09/20/91 | 09/20/91 | 09/20/91 | 09/10/91 | 09/10/91 | 09/17/91 | 09/17/91 |
| Aluminum | 200 | - | - | - | - | 1050 | - | 310 | - |
| Antimony | 60 | - | - | - | - | - | - | - | - |
| Arsenic | 10 | - | - | - | - | 15.2 | 14.2 | - | - |
| Barium | 200 | - | - | - | - | - | - | - | - |
| Beryllium | 5 | - | - | - | - | - | - | - | - |
| Cadmium | 5 | - | - | - | - | - | - | - | - |
| Calcium | 5000 | 50000 | 49400 | 50000 | 50400 | 55700 | 55400 | 63500 | 62500 |
| Chromium | 10 | - | - | - | - | - | - | - | - |
| Cobalt | 50 | - | - | - | - | - | - | - | - |
| Copper | 25 | - | - | - | - | - | - | - | - |
| Iron | 100 | 3440 | 3270 | 3440 | 3470 | 94800 | 94800 | 332 | - |
| Lead | 3 | - | - | - | - | - | - | - | - |
| Magnesium | 5000 | 13300 | 13300 | 13500 | 13300 | 22200 | 22100 | 9610 | 9620 |
| Manganese | 15 | 641 | 608 | 591 | 675 | 4710 | 4670 | 453 | 456 |
| Mercury | 0.2 | - | - | - | - | - | - | - | - |
| Nickel | 40 | - | - | - | - | - | - | - | - |
| Potassium | 5000 | - | - | - | - | - | - | - | - |
| Selenium | 5 | - | - | - | - | - | - | - | - |
| Silver | 10 | - | - | - | - | - | - | - | - |
| Sodium | 5000 | - | - | - | - | 5910 | 6070 | - | - |
| Thallium | 10 | - | - | - | - | - | - | - | - |
| Vanadium | 50 | - | - | - | - | - | - | - | - |
| Zinc | 20 | - | - | - | - | - | - | - | - |
| Cyanide | 10 | - | - | - | - | - | - | - | - |
| Associated Method Blank: | | PBW33 | PBW33 | PBW33 | PBW33 | PBLK26,27 | PBLK26,27 | PBW30 | PBW30 |
| Associated Equipment Blank: | | 00QS00500006XX | 00QS00500006XX | 00QS00500006XX | 00QS00500006XX | 00QS00100006XX | - | - | - |
| Associated Field Blank: | | - | - | - | - | 00QD00100006XX | - | 00QD00200006XX | 00QD00200006XX |

Site: Fire Training Area
#: Level D Validation
F: Filtered Sample

PROJECT: Plattsburgh A.F.B. - Fall of 1991

Inorganic Aqueous Analysis (ug/L)

Summary Table

| ANALYTE | SOW-07/88 CRQL | MW-04-004<br>04MW00400006XX<br>61966 #<br>09/17/91 | MW-04-004<br>04MW00400006XX<br>61973 # F<br>09/17/91 | MW-04-005<br>04MW00500006XX<br>61600 # F<br>09/12/91 | MW-04-005<br>04MW00500006XX<br>61605 #<br>09/12/91 | MW-04-006<br>04MW00600006XX<br>61967 #<br>09/17/91 | MW-04-006<br>04MW00600006XX<br>.61974 # F<br>09/17/91 | MW-13-002<br>13MW00200006XX<br>62080 # F<br>09/18/91 | MW-13-002<br>13MW00200006XX<br>62089 #<br>09/18/91 |
|---|---|---|---|---|---|---|---|---|---|
| (LOCATION: / ISIS ID: / LAB NUMBER: / DATE SAMPLED:) | | | | | | | | | |
| Aluminum | 200 | 1780 | - | - | 235 | - | - | - | - |
| Antimony | 60 | - | - | - | - | - | - | - | - |
| Arsenic | 10 | - | - | - | - | - | - | - | - |
| Barium | 200 | - | - | - | - | - | - | - | - |
| Beryllium | 5 | - | - | - | - | - | - | - | - |
| Cadmium | 5 | - | - | - | - | - | - | - | - |
| Calcium | 5000 | 69800 | 69700 | 88900 | 86900 | 70100 | 70300 | 59800 | 59500 |
| Chromium | 10 | - | - | - | - | - | - | 34.0 | 34.8 |
| Cobalt | 50 | - | - | - | - | - | - | - | - |
| Copper | 25 | - | - | - | - | - | - | - | - |
| Iron | 100 | 4540 | 2210 | - | 1830 | 3070 | 2900 | 315 | 304 |
| Lead | 3 | 5.3 | - | - | 19.5 | - | - | - | - |
| Magnesium | 5000 | 15300 | 14600 | 21600 | 21300 | 24200 | 24400 | 20800 | 20700 |
| Manganese | 15 | 3440 | 3480 | 1620 | 1570 | 12100 | 12100 | 632 | 608 |
| Mercury | 0.2 | - | - | - | - | - | - | - | - |
| Nickel | 40 | - | - | - | - | - | - | - | - |
| Potassium | 5000 | 8920 | 8150 | - | - | - | - | - | - |
| Selenium | 5 | - | - | - | - | - | - | - | - |
| Silver | 10 | - | - | - | - | - | - | - | - |
| Sodium | 5000 | - | - | - | - | - | - | - | - |
| Thallium | 10 | - | - | - | - | - | - | - | - |
| Vanadium | 50 | - | - | - | - | - | - | - | - |
| Zinc | 20 | - | - | - | 27.4 | - | - | - | - |
| Cyanide | 10 | - | - | - | - | - | - | - | - |
| Associated Method Blank: | | PBW30 | PBW30 | PBLK28,29 | PBLK28,29 | PBW30 | PBW30 | PB5530W | PB5530W |
| Associated Equipment Blank: | | - | - | 00QS00200006XX | 00QS00200006XX | - | - | 00QS00300006XX | 00QS00300006XX |
| Associated Field Blank: | | 00QD00200006XX | 00QD00200006XX | - | 00QD00100006XX | 00QD00200006XX | 00QD00200006XX | - | - |

Site: Fire Training Area
#: Level D Validation
F: Filtered Sample

Summary Table

| | | LOCATION: | MW-16-001 | MW-16-001 |
|---|---|---|---|---|
| | | ISIS ID: | 16MW00100006XX | 16MW00100006XX |
| | | LAB NUMBER: | 61599 # F | 61604 # |
| | | DATE SAMPLED: | 09/12/91 | 09/12/91 |
| ANALYTE | SOW-07/88 | CRQL | | |
| Aluminum | | 200 | - | - |
| Antimony | | 60 | - | - |
| Arsenic | | 10 | - | - |
| Barium | | 200 | - | - |
| Beryllium | | 5 | - | - |
| Cadmium | | 5 | - | - |
| Calcium | | 5000 | 127000 | 131000 |
| Chromium | | 10 | - | - |
| Cobalt | | 50 | - | - |
| Copper | | 25 | - | - |
| Iron | | 100 | - | 678 |
| Lead | | 3 | - | - |
| Magnesium | | 5000 | 20500 | 21000 |
| Manganese | | 15 | 3060 | 3230 |
| Mercury | | 0.2 | - | - |
| Nickel | | 40 | - | - |
| Potassium | | 5000 | 6260 | 6090 |
| Selenium | | 5 | - | - |
| Silver | | 10 | - | - |
| Sodium | | 5000 | - | - |
| Thallium | | 10 | - | - |
| Vanadium | | 50 | - | - |
| Zinc | | 20 | - | - |
| Cyanide | | 10 | - | - |

| | | |
|---|---|---|
| Associated Method Blank: | PBLK28,29 | PBLK28,29 |
| Associated Equipment Blank: | 00QS00200006XX | 00QS00200006XX |
| Associated Field Blank: | - | 00QD00100006XX |

Site: Fire Training Area
#: Level D Validation
F: Filtered Sample

# PHASE I REMEDIAL INVESTIGATION
# SURFACE WATER/SEDIMENT